



**DRCOG 2020-2023  
TRANSPORTATION IMPROVEMENT PROGRAM**

**Adams County Subregional Share Project**

**Aurora High Line Canal Trail – East Colfax Avenue to  
Interstate 70 Application Package**

**February 22, 2019**



City Manager  
15151 E. Alameda Parkway, 5th Floor  
Aurora, Colorado 80012  
phone 303.739.7010

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February 25, 2019

Brighton Council Member Lynn Baca  
Chair, Adams County Subregional Forum  
C/O  
Kristin Sullivan, AICP  
Director, Community & Economic Development  
Interim Director, Public Works  
4430 South Adams County Parkway, 1st Floor, Suite W2000A  
Brighton, CO 80601-8204

**RE: DRCOG 2020-2023 TIP Adams County Subregional Forum Project Applications**

Dear Council Member Baca,

The City of Aurora is pleased to submit our DRCOG 2020-2023 Transportation Improvement Program Adams County Subregional Forum Project Applications for four (4) key subregionally significant multimodal improvement projects. These projects are critical to substantially improving mobility and travel for our collective customers throughout the City, the County and beneficiaries in the eastern part of the metro area. The City has advanced these projects to varying levels and we believe them to be implementable ready and fully capable of providing benefits in the near term.

Delivering these projects will provide a variety of calculated benefits including travel time and cost savings, emissions reductions and estimated crash/injury reductions. These projects will improve travel operations, enhance and provide needed connectivity for travelers throughout the area.

Thank you for your favorable consideration of these project funding requests. These projects represent key investments in our multimodal mobility system and will improve the quality and safety of our customer's mobility experience. If you have any questions about this application, please contact Cindy Colip, [ccolip@auroragov.org](mailto:ccolip@auroragov.org), 303.739.7300 or Mac Callison, [mcalliso@auroragov.org](mailto:mcalliso@auroragov.org), 303.739.7256.

Sincerely,

  
James M. Twombly  
City Manager

cc: Mayor Bob LeGare  
Aurora City Council Members  
Nancy Freed, Deputy City Manager  
Jason Batchelor, Deputy City Manager  
Dave Chambers, Public Works Director  
George Adams, Planning & Development Services Director  
Cindy Colip, Public Works Deputy Director  
Mac Callison, Transportation Planning Supervisor

## APPLICATION OVERVIEW

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The **Subregional Share Call for Projects** will **open on January 2, 2019**, with applications **due no later than 3 p.m. on February 27, 2018** to [your subregional forum](#).

- To be eligible to submit, at least one person from your agency must have attended one of the mandatory TIP training workshops (held August 8 and August 16) or a supplemental training held on September 14.
- Projects requiring CDOT and/or RTD concurrence must provide their official response with the application submittal. The CDOT/RTD concurrence request is due to CDOT/RTD no later than January 7, with CDOT/RTD providing a response no later than February 8.
- Any applications submitted by regional or similar agencies (TMA's), or municipalities crossing multiple subregions, must be submitted through the subregional forum based on where the majority of the project is located.
- Data to help the sponsor fill out the application, *especially Part 3*, can be found [here](#).
- If any sponsor wishes to request additional data or calculations from DRCOG staff, please submit your request to [tcottrell@drcog.org](mailto:tcottrell@drcog.org) no later than February 6, 2019.
- The application must be affirmed by either the applicant's City or County Manager or Chief Elected Official (Mayor or County Commission Chair) for local governments, or agency director or equivalent for other applicants.
- Further details on project eligibility, evaluation criteria, and the selection process are defined in the ***Policy on Transportation Improvement Program (TIP) Preparation: Procedures for Preparing the 2020-2023 TIP***, which can be found online [here](#).

## APPLICATION FORM OUTLINE

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The 2020-2023 TIP Subregional Share application contains three parts: *base project information* (Part 1), *evaluation questions* (Part 2), and *data calculation estimates* (Part 3). DRCOG staff will review each forum's submitted applications for eligibility. Each forum will be responsible for making a comprehensive evaluation of all eligible applications and rank ordering their submittals to determine their recommended projects and waiting lists. Forum recommendations will be forwarded to DRCOG staff for a final recommendation to the TAC, RTC, and DRCOG Board.

### **Part 1 | Base Information**

Applicants will enter **foundational** information for their *project/program/study* (hereafter referred to as *project*) in Part 1, including a Problem Statement, project description, and concurrence documentation from CDOT and/or RTD, if applicable. Part 1 will not be scored.

### **Part 2 | Evaluation Criteria, Questions, and Scoring**

This part includes four sections (A-D) for the **applicant to provide qualitative and quantitative responses** to use for scoring projects. The outcomes from Part 3 should guide the applicant's responses in Part 2.

**Scoring Methodology:** Each section will be scored using a scale of *High-Medium-Low*, relative to other applications received. The four sections in Part 2 are weighted and scored as follows:

**Section A. Subregional Significance of Proposed Projects ..... 40%**

<b>High</b>	The project will significantly address a clearly demonstrated major subregional problem and benefit people and businesses from multiple subregions.
<b>Medium</b>	The project will either moderately address a major problem or significantly address a moderate-level subregional problem.
<b>Low</b>	The project will address a minor subregional problem.

**Section B. Metro Vision TIP Focus Areas ..... 30%**

<b>High</b>	The project will <b>significantly improve</b> the safety and/or security, <b>significantly increase</b> the reliability of the transportation network, and benefit a <b>large number and variety</b> of users (including vulnerable populations*).
<b>Medium</b>	The project will <b>moderately improve</b> the safety and/or security, <b>moderately increase</b> the reliability of the transportation network, and benefit a <b>moderate number and variety</b> of users (including vulnerable populations*).
<b>Low</b>	The project will <b>minimally improve</b> the safety and/or security, <b>minimally increase</b> the reliability of the transportation network, and benefit a <b>limited number and variety</b> of users (including vulnerable populations*).

*\*Vulnerable populations include: Individuals with disabilities, persons over age 65, and low-income, minority, or linguistically-challenged persons.*

**Section C. Consistency & Contributions to Transportation-focused Metro Vision Objectives ..... 20%**

Metro Vision guides DRCOG’s work and establishes shared expectations with our region’s many and various planning partners. The plan outlines broad outcomes, objectives, and initiatives established by the DRCOG Board to make life better for the region’s residents. The degree to which the outcomes, objectives, and initiatives identified in Metro Vision apply in individual communities will vary. Metro Vision has historically informed other DRCOG planning processes, such as the TIP.

<b>High</b>	The project will <b>significantly</b> address Metro Vision transportation-related objectives and is determined to be in the <b>top third</b> of applications based on the magnitude of benefits.
<b>Medium</b>	The project will <b>moderately</b> address Metro Vision transportation-related objectives and is determined to be in the <b>middle third</b> of applications based on the magnitude of benefits.
<b>Low</b>	The project will <b>slightly or not at all</b> address Metro Vision transportation-related objectives and is determined to be in the <b>bottom third</b> of applications based on the magnitude of benefits.

**Section D. Leveraging of non-Subregional Share funds (“overmatch”) ..... 10%**

Scores are assigned based on the percent of outside funding sources (non-Subregional Share).

% of Outside Funding (non-Subregional Share)	<b>High</b>	60% and above
	<b>Medium</b>	30-59%
	<b>Low</b>	29% and below



Based on the applicant's project elements, sponsors will complete the appropriate sections to estimate usage or benefit values. Part 3 is not scored, and the quantitative responses should be used to back-up the applicant's qualitative narrative.

## Part 1

## Base Information

1. Project Title	Aurora High Line Canal Trail – East Colfax Avenue to Interstate 70	
2. Project <i>Start/End</i> points or Geographic Area <i>Provide a map with submittal, as appropriate</i>	The trail begins at the intersection of East Colfax Avenue and Tower Road, extending to the north ROW of I-70.  See Attachment A (Project Site Plan) and Attachment B (Regional Context)	
3. Project Sponsor ( <i>entity that will construct/ complete and be financially responsible for the project</i> )	City of Aurora	
4. Project Contact Person, Title, Phone Number, and Email	Cindy Colip, Acting Deputy Director of Public Works, 303-739-7300, ccolip@auroragov.org	
5. Does this project touch CDOT Right-of-Way, involve a CDOT roadway, access RTD property, or request RTD involvement to operate service?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, provide applicable concurrence documentation with submittal</i>	
What planning document(s) identifies this project?	<input checked="" type="checkbox"/> <a href="#">DRCOG 2040 Fiscally Constrained Regional Transportation Plan (2040 FCRTTP)</a>	
	<input checked="" type="checkbox"/> Local plan:	<ul style="list-style-type: none"> <li>City of Aurora Bicycle and Pedestrian Master Plan <a href="https://www.auroragov.org/business_services/planning/plans_and_studies/transportation_planning/bicycle_and_pedestrian_planning">https://www.auroragov.org/business_services/planning/plans_and_studies/transportation_planning/bicycle_and_pedestrian_planning</a>, pages 12-22</li> <li>City of Aurora Bicycle and Pedestrian Master Plan – Recommended Bicycle Network</li> <li>DRCOG 2040 Metro Vision Transportation Plan <a href="https://drcog.org/sites/default/files/resources/ACTION%20DRAFT-2040%20MVRTP-RTC%20and%20Board%202018.pdf">https://drcog.org/sites/default/files/resources/ACTION%20DRAFT-2040%20MVRTP-RTC%20and%20Board%202018.pdf</a>, pages 33-42</li> <li>Adams County Transportation Plan <a href="http://www.adcogov.org/sites/default/files/2776.pdf">http://www.adcogov.org/sites/default/files/2776.pdf</a>, pages 11-13 and 37-40</li> <li>DRCOG Active Transportation Plan</li> <li><a href="https://drive.google.com/file/d/181Zl-6KIBVpZqCpSBCR5-xNj5BZqZEoe/view?usp=sharing">https://drive.google.com/file/d/181Zl-6KIBVpZqCpSBCR5-xNj5BZqZEoe/view?usp=sharing</a> Appendix A Page 4</li> </ul>
	<input checked="" type="checkbox"/> Other(s):	<ul style="list-style-type: none"> <li>High Line Canal Community Vision Plan – Attachment C</li> <li>Rocky Mountain Arsenal National Wildlife Refuge Comprehensive Management Plan <a href="https://www.fws.gov/mountain-prairie/refuges/planningPDFs/rkm_1996_cmpfinal_1site.pdf">https://www.fws.gov/mountain-prairie/refuges/planningPDFs/rkm_1996_cmpfinal_1site.pdf</a> Chapter 1 (45 pages)</li> <li>The Emerald Strands – Attachment D pages 11-12 &amp; 30-31</li> </ul>
<i>Provide link to document/s and referenced page number if possible, or provide documentation with submittal</i>		

6. Identify the project's **key elements**.

- ☐ Rapid Transit Capacity (2040 FC RTP)
- ☐ Transit Other:
- ☒ Bicycle Facility
- ☒ Pedestrian Facility
- ☒ Safety Improvements
- ☐ Roadway Capacity or Managed Lanes (2040 FC RTP)
- ☐ Roadway Operational

Grade Separation

- ☐ Roadway
- ☐ Railway
- ☒ Bicycle
- ☒ Pedestrian
- ☐ Roadway Pavement Reconstruction/Rehab
- ☐ Bridge Replace/Reconstruct/Rehab
- ☐ Study
- ☐ Design
- ☐ Transportation Technology Components
- ☐ Other:

7. **Problem Statement** What specific Metro Vision-related subregional problem/issue will the transportation project address?

In Objectives 4, 5, 7b, and 11 the DRCOG Metro Vision Transportation Plan calls to expand and improve the region's multimodal transportation system and improve its safety, connecting residents to medical facilities, natural resources, recreation areas, and the 1,500 miles of the Greater Metro Area trail network. This project, **Aurora High Line Canal Trail – East Colfax Avenue to Interstate 70** will enhance the safety of the multimodal transportation facilities in the area as well as eliminate a significant gap in the Greater Denver Metro trail network.

1) MV Objective 4: Improve and expand the region's multimodal transportation system, services and connections.

Green Valley Ranch, Gateway, and Northeast neighborhoods to the north of I-70, including the Aerotropolis environs are essentially isolated from the Greater Denver Metro bicycle and pedestrian trail network due to the significant physical barrier created by I-70. To reach the High Line Canal Trail, Sand Creek Greenway Trail and Triple Creek Trailhead, bicyclists and pedestrians are forced to travel alongside busy roadways, make at-grade crossings of arterial roadways, and use the Tower Road interchange bridge over I-70. The unimproved maintenance trail along the High Line Canal in this area remains disconnected from the rest of the 71-mile Metro Area High Line Canal Regional Trail corridor, limiting neighborhood access to the developed trail both to the north and south of the Interstate. In addition, the area south of I-70, including Tower Triangle, Friendly Village, Altura, Lyn Knoll, and Laredo Highline neighborhoods are also isolated from the commercial centers, medical facilities, employment opportunities, and transit facilities to the north, due to the major barrier created by I-70.

2) MV Objective 5: Operate, manage and maintain a safe and reliable transportation system.

To access the commercial areas and medical care facilities north of I-70, residents of Tower Triangle, etc., who have no access to a motor vehicle and those residents who choose to walk or bicycle must use the heavily travelled Tower Road interchange bridge over I-70 alongside of busy Tower Road (24,000 ADT), making at-grade crossings in areas that have no crosswalks and are not ADA compliant, which is stressful, inconvenient and challenging from a safety perspective. Furthermore, in order to reach the major portion of the Denver Metro Trail in the area, bicyclists and pedestrians from the Green Valley Ranch neighborhood must traverse these same safety challenged routes.

In the past five years there have been two pedestrian fatalities at the interchange of I-70 and Tower Road. This project will improve safety for bicyclists and pedestrians using this dedicated facility.

3) MV Objective 7b: Connect people to natural resource or recreational areas.

Green Valley Ranch and Tower Triangle neighborhoods, as well as the entire northeast Metro Area and Aerotropolis, are disconnected from the over 1500 miles of the greater Denver Metro Area bicycle and pedestrian network, including nearby Sand Creek Greenway Trail, High Line Canal Trail, Beck Recreation Center Connector, Aurora Sports Park Connector, Triple Creek Trailhead, and the Colorado Front Range Trail, resulting in disconnection from the open space and recreation areas that are adjacent to these trails.

4) MV Objective 11: Improve transportation connections to health care facilities and service providers.

The Tower Triangle neighborhood does not contain any medical care facilities. To the north in the Green Valley Ranch neighborhood there are eight health care facilities. Households that do not have access to a motor vehicle, and elderly and disabled persons who are not able to drive are forced to use the Tower Road interchange bridge over I-70 to walk or bike to these health care facilities.

**8. Define the *scope* and *specific elements* of the project.**

The project will construct one of the most costly, difficult and last remaining missing segment of the High Line Canal Trail within the Metro Area. It will provide a safe, low-stress, convenient, grade-separated crossing of I-70 for pedestrians and bicyclists. The proposed 8-foot wide concrete trail will be 1.8 miles in length between East Colfax Avenue and I-70. The alignment is along the existing High Line Canal maintenance road, except for a short section between E. 22<sup>nd</sup> Place and E. 28<sup>th</sup> Avenue where the trail follows Tower Road rights-of-way in order to safely cross the Union Pacific Railroad (UPRR) and to overcome utility constraints that preclude an underpass at the northernmost intersection of the canal with Tower Road.

The north endpoint of the project will involve reconstructing the existing canal box culvert under I-70 to serve the dual purpose of accommodating the trail while continuing to convey water associated with the canal. Where the trail exits the proposed culvert, it will connect to a 1.2-mile long “north” segment of the High Line Canal Trail, which the City has planned to complete and link to Denver’s Green Valley Ranch neighborhood as a separate project before the end of this year (2019).

Overall, the TIP project will also involve eight at-grade street crossings along with ADA-compliant ramps, one at-grade crossing of the UPRR tracks, three culvert/bridge crossings of the canal, and the critical I-70 underpass. Implementation of this project will be a significant milestone in that it will result in the completion of a continuous paved trail along the entire distance of the canal through Aurora, with the exception of the final mile that will be constructed by the developer of the currently underway Painted Prairie Neighborhood project located north of Green Valley Ranch.

**9. What is the status of the proposed project?**

The city of Aurora engaged the services of an engineering firm to refine the proposed alignment of the trail and prepare 60% design plans with construction cost estimates as a basis for this TIP application. The purpose of undertaking that work beforehand was to have confidence that this project is feasible and to have the design advanced to a stage whereby the time that it takes to start building the trail once construction funding is secured can be minimized. The city’s goal is to expedite closure of this long-standing and most costly gap in the regional trail network as soon as possible. The engineering consultant is continuing to coordinate with stakeholders on the design of two major crossings for the trail, one being the trail underpass at I-70 and the other the at-grade crossing of the UPRR right-of-way and tracks west of Tower Road. This coordination is being done so that the preliminary design will be wrapped up and final design can proceed expeditiously. Upon receipt of TIP funding, the city of Aurora is prepared to immediately move into final design and then construct this 1.8 mile trail segment, which together with the aforementioned 1.2-mile segment to be built in 2019 (refer to question 8) will complete the High Line Canal Trail north to Green Valley Ranch.

**10. Would a smaller DRCOG-allocated funding amount than requested be acceptable, while maintaining the original intent of the project?**

☐ Yes ☒ No

If yes, define smaller meaningful limits, size, service level, phases, or scopes, along with the cost for each.

## A. Project Financial Information and Funding Request

<b>1. Total Project Cost</b>		<b>\$4,851,267.00</b>
<b>2. Total amount of DRCOG Subregional Share Funding Request</b>	<b>\$3,301,267</b>	<b>68% of total project cost</b>
<b>3. Outside Funding Partners (other than DRCOG Subregional Share funds)</b> List each funding partner and contribution amount.	<b>\$\$ Contribution Amount</b>	<b>% of Contribution to Overall Total Project Cost</b>
Conservation Trust Fund	\$1,000,000	21%
Adams County Open Space Tax	\$550,000	11%
	\$	
	\$	
	\$	
	\$	
<b>Total amount of funding provided by other funding partners (private, local, state, Regional, or federal)</b>	<b>\$1,550,000</b>	

<b>Funding Breakdown (year by year)*</b>		<i>*The proposed funding plan is not guaranteed if the project is selected for funding. While DRCOG will do everything it can to accommodate the applicants' request, final funding will be assigned at DRCOG's discretion within fiscal constraint. Funding amounts must be provided in year of expenditure dollars using an inflation factor of 3% per year from 2019.</i>			
	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Total</b>
<b>Federal Funds</b>	\$	\$3,301,267	\$	\$	\$3,301,267
<b>State Funds</b>	\$	\$	\$	\$	\$0
<b>Local Funds</b>	\$650,000	\$800,000	\$100,000	\$	\$1,550,000
<b>Total Funding</b>	\$650,000	\$4,101,267	\$100,000	\$0	\$4,851,267
<b>4. Phase to be Initiated</b> <i>Choose from Design, ENV, ROW, CON, Study, Service, Equip. Purchase, Other</i>	Final Design & ROW Choose an item	Final Review, Bid & CON. Choose an item	CON		

**5. By checking this box,** the applicant's Chief Elected Official (Mayor or County Commission Chair) or City/County Manager for local governments or Agency Director or equivalent for others, has certified it allows this project request to be submitted for DRCOG-allocated funding and will follow all DRCOG policies and state and federal regulations when completing this project, if funded.



## Part 2 Evaluation Criteria, Questions, and Scoring

### A. Subregional significance of proposed project

WEIGHT **40%**

Provide **qualitative and quantitative** (derived from Part 4 of the application) responses to the following questions on the subregional significance of the proposed project.

#### 1. Why is this project important to your subregion?

The project, and especially the grade-separated crossing of I-70, will have a profound impact on the subregion by providing a critical multimodal connection between the residential areas and local commercial, retail, and employment centers, thereby supporting economic vitality and work force access. In addition, it will provide safe, comfortable and low-stress multimodal access to nearby rapid transit (A Line), medical care facilities, commercial areas, library, and recreational facilities. The Tower Triangle (population 4,250) and Green Valley Ranch (population 29,000) neighborhoods, as well as the entire northeast and Aerotropolis areas, are essentially isolated from the Denver Metro Area bicycle and pedestrian trail network (see the Denver Regional DRCOG Bicycle Map, pages 33-42). Currently, due to the lack of a dedicated grade-separated crossing of I-70, pedestrians and bicyclists wishing to access the facilities across I-70 are forced to use the busy Tower Road interchange bridge over the Interstate.

The proposed project will improve access to the rail station at 40<sup>th</sup> Avenue and Airport Blvd., which is only one mile west of the project. This station serves the RTD A-Line, which connects Denver International Airport and the downtown transportation hub at Union Station and access to the R Line. In addition, there will be improved interface with RTD bus routes 169 and 15. This will expand the options for those residents who are dependent on biking, walking, and transit.

The Aurora High Line Canal Trail – East Colfax Avenue to Interstate 70, will complete an important missing section of the High Line Canal Regional Trail Corridor. The High Line Canal is a 71-mile water transportation utility that was built in the 1880's to transport water from the South Platte River at Waterton Canyon to settlers and farmers in what would eventually become the Denver Metro Area. Since the 1970's, the canal maintenance road has been gradually improved and converted into one of the nation's longest and most beautiful linear parks. It spans 11 governmental jurisdictions, and its cottonwood-shaded banks weave through residential neighborhoods, 73 different green spaces ranging from pocket parks to state parks, golf courses, cemeteries, commercial areas, and industrial lands connect to this facility. Due to the high cost of constructing an underpass at I-70, the East Colfax Avenue to I-70 segment of the trail is one of the most costly and difficult gaps to complete and is one of the last segments to be scheduled for improvements. This project will fill in a missing gap in this significant transportation and recreational resource.

The completion of this project will connect the Green Valley Ranch and Tower Triangle neighborhoods, and the entire northeast and Aerotropolis areas to the over 1,500 miles of the greater Denver Metro Area bicycle and pedestrian network, including nearby Sand Creek Greenway Trail, High Line Canal Trail, Colorado Front Range Trail, Beck Recreation Center Connector, Aurora Sports Park Connector, and Triple Creek Trailhead to the south. These trails provide multimodal access to many important regional urban centers and employment centers including Fitzsimons Innovation Community, CU Anschutz Medical Campus and Buckley Airforce Base via Sand Creek Greenway, and Gaylord Rockies Resort and Conference Center and DIA via the High Line Canal Trail to the north.

According to the pedestrian count done on the High Line Canal Trail east of Ensenada Street on February 2, 2019, there were 14 bicyclists and 36 pedestrian trips from 6 am to 6 pm on a winter weekday. In addition, there were 3 horse trips during daylight hours. Note that all count data was collected during clear weather days; however, it is to be noted that pedestrian volumes are subject to change based on outside temperature and therefore are

likely to be substantially higher during summer months. The completion of the proposed project will allow these users access to the improved section of the High Line Canal Trail north of I-70.

**2. Does the proposed project cross and/or benefit multiple **municipalities**? If yes, which ones and how?**

Yes. The project is located within the city of Aurora, and will connect to the currently improved trail north of 38<sup>th</sup> Avenue in the City and County of Denver. This will provide the residents of both cities, as well as Commerce City to the north, with access to the Greater Denver Metro trail network. In addition, this project will benefit many municipalities along the Canal, including Greenwood Village, Cherry Hills Village, Denver, Highlands Ranch, Centennial, Littleton and the unincorporated Douglas County. The residents will benefit from the safe, grade-separated crossing of I-70, giving them multimodal transportation access to medical, commercial, and recreation facilities north and south of I-70. This improved access will foster resident expenditures as they enjoy short bicycle/pedestrian trips on the new trail. Also, increased consumer spending by the population on clothing, equipment and gear related to trail user needs is anticipated.

According to the DRCOG Bicycle and Pedestrian Use Counts, the High Line Canal Trail in Aurora at the Iliff Street underpass sees 246 pedestrians and 475 cyclists per weekday. With the completion of the proposed segment of the High Line Canal Trail, it is estimated that 25% of those trail users will continue from the established trail onto the new section, thereby attracting and supporting tourism spending by day-trippers as well as long-distance visitors.

In addition, the residents of both Denver and Aurora will benefit from the increased opportunities for obtaining the health benefits of walking, running, and bicycling. The Canal originates at Waterton Canyon in Douglas County and runs to Green Valley Ranch in Northeast Denver, falling within one mile of more than 350,000 residents.

**3. Does the proposed project cross and/or benefit another **subregion(s)**? If yes, which ones and how?**

Yes. The proposed project begins at Arapahoe County, with the bulk of the project in Adams County, and ends at Denver County. By improving the regional trail network across the three counties (subregions), this project will benefit cyclists and pedestrians in all three subregions and will open up a host of transportation and recreational opportunities. The location of the project is such that users of the proposed trail link can easily travel beyond the Adams County subregion and into Arapahoe County and Denver County subregions as well as Douglas County subregion.

A major benefit will be promoting economic vitality due to an increased workforce pool. Increased multimodal accessibility will allow residents without access to a motor vehicle to have a wider range of options for employment.

Social benefits will include better access to health care, especially for those residents without access to a motor vehicle. This project will also promote a more active lifestyle by encouraging bicycle and pedestrian activity, thus benefiting the health and wellbeing of the communities.

**4. How will the proposed project address the specific transportation problem described in the **Problem Statement** (as submitted in Part 1, #8)?** The Project will provide a critical grade-separated crossing of I-70, a low-stress, off-street bicycle and pedestrian facility, and includes the installation of ADA compliant crosswalks at all at-grade crossings, allowing safer, more comfortable non-motor vehicle access to commercial areas, the eight medical facilities located in Green Valley Ranch, and recreation facilities. The nearby recreation facilities include Aurora Sports Park, Beck Recreation Center, Springhill Golf Course, Star K Ranch/Morrison Nature Center, Sand Creek Regional Greenway Trail, Green Valley Ranch Recreation Center, and Green Valley Ranch Golf Course. The primary industries in the area including construction, administration, hospitality, transportation and manufacturing, with a high resident to employee ratio, suggesting a majority of commuters in the area.



The Project will expand the eastern Denver Metro transportation system and will improve connectivity and safety, which, in turn, will serve all modes of travel. The Project will complete an important missing segment of the High Line Canal Trail, which will directly connect the Tower Triangle (population 4,250) and Green Valley Ranch neighborhoods (population 29,000), and the entire northeast metro area and aerotropolis environs to the over 1,500 miles of the greater Denver Metro Area bicycle and pedestrian network.

This project will provide a grade-separated crossing of I-70 from the Tower Triangle neighborhood to the medical care facilities in the Green Valley Ranch neighborhood. It will also provide safer access to the rail station at 40th Avenue and Airport Blvd., giving vulnerable populations more options for commuting to work and medical care facilities, and enjoying parks and recreation centers.

**5. One foundation of a sustainable and resilient economy is physical infrastructure and transportation. How will the completed project allow people and businesses to thrive and prosper?**

Investing in new trail systems will bring a large number of benefits to the area even outside the biking and hiking communities. These benefits will extend to areas such as environment and air pollution, quality of life, and the economy. Studies are indicating that adding these new trail systems will open up new opportunities for transportation, allowing faster routes to and from work, and even eliminating the need for vehicular use. It is estimated that the year after the trail opens there will be 400 additional bicycle and pedestrian trips on the facility, and that this will increase to 1000 new trips by 2040. Trails will connect the Green Valley Ranch and Tower Triangle areas to the greater Denver Metro Area trail network, providing easier access and increasing opportunities for families and other groups to enjoy facilities.

Because of an increase in convenience, new trail systems will bring a variety of economy-boosting activities to these areas. Easy access to and from the Green Valley Ranch and Tower Triangle areas will encourage participants to take part in pedestrian and bicycle day trips, which will bring extra business to local establishments within the Gateway Park Retail Center on Tower Road between E. 32<sup>nd</sup> Avenue and E 40<sup>th</sup> Avenue.

With projected numbers showing that many people will walk or bike to work if the appropriate routes are provided, it is estimated that the creation of this new infrastructure will reduce air pollution and fuel use by as much as 152 lbs. GHG daily (431 lbs. GHG daily by the year 2040.) This will also enrich the lives of many people, helping them to be more active and adding to the overall health of the community and environment. In fact, a study commissioned by the Colorado Department of Transportation in 2000 determined that bicycling contributed \$1 billion to the economy from manufacturing, retail, tourism and bike races.

When polled about their satisfaction with current trail systems in the recently completed Arapahoe County 2017 Bicycle & Pedestrian Master Plan, Arapahoe County residents feel strongly that such improvements would impact the community and their families in a positive way. Eliminating daily stressful commutes, contributing to an active life-style, and adding more opportunities for recreation are top priorities for many residents. This new segment of the High Line Canal Trail will increase quality of life in the immediate vicinity, and it will have positive spillover effects across the Denver Metro Area.

**6. How will connectivity to different travel modes be improved by the proposed project?**

One of the objectives of this project is to encourage different travel modes beyond the traditional motorized vehicle. This trail connection will remove motor vehicles from congested roadways and provide access to major public transportation hubs, such as the RTD A Line rail stop at 40th Avenue and Airport Blvd. The proposed section of trail will connect to 38<sup>th</sup> Avenue, which is a key street that leads to and from the rail line. RTD bus routes 169 and 15 along Tower Road are capable of capturing pedestrians and bicyclists who could use the trail as well as bus



transportation for their multi-modal journeys. In addition, this trail segment will directly connect two existing regional trails, giving users the opportunity to traverse the entire Denver Metro Area, and will connect people to local parks and recreation facilities, utilizing low-stress, off-street trails.

7. Describe funding and/or project partnerships (*other subregions, regional agencies, municipalities, private, etc.*) established in association with this project.

The Colorado Lottery and Adams County Open Space Tax are match funding partners with this project. Denver Water is the owner of the canal property.

## B. DRCOG Board-approved Metro Vision TIP Focus Areas

WEIGHT

**30%**

Provide **qualitative and quantitative** (derived from Part 3 of the application) responses to the following questions on how the proposed project addresses the three DRCOG Board-approved Focus Areas (in bold).

1. Describe how the project will **improve mobility infrastructure and services for vulnerable populations (including improved transportation access to health services)**.

Vulnerable populations are often more reliant on transit and active transportation options rather than a motor vehicle. Many low-wage workers working at warehouse and fulfillment centers rely entirely on public transit and active transportation to access their work sites. The Project will provide a safer, more comfortable, low-stress transportation option to low-income families, households that do not have access to a motor vehicle or cannot afford a motor vehicle, and elderly and disabled persons who are still able to walk or cycle. This project will provide a grade-separated access across I-70 from the Tower Triangle neighborhood to the medical care facilities in the Green Valley Ranch neighborhood. It will also provide safer access to the Greater Denver Trail network and the rail station at 40th Avenue and Airport Blvd., giving vulnerable populations more options for commuting to work and shopping centers, accessing transit, and enjoying parks and recreation centers.

Vulnerable populations were estimated for the two neighborhoods that will most likely be affected by this project. Data obtained from [statisticalatlas.com/block-group/Colorado/Adams-County](https://statisticalatlas.com/block-group/Colorado/Adams-County).

Tower Triangle:

- 66 seniors over age 65
- 81 children
- 1360 minorities
- 552 households below poverty level

Green Valley Ranch:

- 1384 seniors over age 65
- 9210 children
- 9344 minorities
- 1263 households below poverty level
- 8 health care facilities
- 2 assisted living facilities
- 1 public library

On completion of this project, vulnerable populations will have the ability to access the other 68 miles of the High Line Canal Trail, and ride great distances across the Denver Metro Area on the connected trail system. This mobility option will provide greater access to medical facilities, industrial centers, rapid transit stations, recreational facilities, Denver Public Library Green Valley Ranch Branch, Marrama Elementary School, Laredo Elementary School, Hinkley High School, Lynn Knoll Elementary School, and South Middle School.

2. Describe how the project will **increase reliability of existing multimodal transportation network**.

As shown on the DRCOG Bicycle Facility Inventory map and the Denver Regional Bicycle Map, there is currently a 1.8-mile gap in the improved High Line Canal Trail between I-70 and East Colfax Avenue. This gap in improved trail and the lack of a safe crossing of I-70 results in a separation of the neighborhoods of Tower Triangle and Green Valley Ranch and the entire northeast area of the metro area and Aerotropolis area from the rest of the existing active transportation network of the metro area. Pedestrian and bicycle mobility by the segment of the population that is dependent upon these modes of travel is not currently reliable in this area, due to the lack of dedicated facilities to serve this purpose. The proposed connection will make a profound impact on the accessibility of the greater Denver Metro Area trail system for pedestrians and bicyclists in these neighborhoods. Furthermore, providing a grade-separated crossing of I-70 will substantially help with the safety, efficiency, and reliability of the multimodal transportation network in the area and region. By developing the trail for bicycle and pedestrian travel, and minimizing motor vehicle interaction/conflict/delay, travel time will be reduced. Similarly, the transportation network for motorists will be made more reliable by decreasing potential conflict with bicyclist and pedestrians who are currently forced to share the road.

3. Describe how the project will **improve transportation safety and security**.

The new, proposed segment of the High Line Canal Trail will connect many low-stress regional and local trail networks that are much safer and more preferred than on-street options. Furthermore, the new project will deliver an exclusive undercrossing of I-70, providing users with a safe underpass.

On February 5, 2019, Average Daily Traffic (ADT) volumes were collected for a period of 24 hours on Tower Road north of 28<sup>th</sup> Avenue. Tower Road data indicated volumes of 11,390 northbound vehicles and 12,332 southbound vehicles for a total ADT of 23,722 vehicles. A morning peak traffic hour beginning at 7:00 AM was determined with 746 northbound vehicles and 851 southbound vehicles for a total of 1,597 vehicle trips. An afternoon peak traffic hour beginning at 4:00 PM was determined with 918 northbound vehicles and 917 southbound vehicles for a total of 1,835 vehicle trips.

According to the City of Aurora Crash and Fatality Data, from 2012 to 2018 there were approximately 756 accidents on Tower Road from I-70 to East Colfax Avenue, including two bicycle fatalities at Smith Road and Tower Road, and two pedestrian fatalities at I-70 and Tower Road.

This project will provide an off-street route along Tower Road, and a grade-separated crossing of I-70 as an alternative to the Tower Road interchange bridge over I-70. The projected outcome is a reduction in both crash potential and future bicycle and pedestrian crash actualities.

Safety is of paramount concern when planning improvements for an active transportation network. The proposed I-70 underpass will be a substantial safety benefit to the cyclists/pedestrians who desire to take advantage of the local trail network. In addition, improving at-grade crossings whenever possible and installing ADA compliant crosswalks will significantly reduce the possibility of motor vehicle/pedestrian or motor vehicle/cyclist accidents. The installation of crosswalks will be a substantial safety improvement, because crosswalks do not currently exist at most of the at-grade crossings along Tower Road, except for the newly installed light/crosswalk at Tower Road and E. 28<sup>th</sup> Ave. Finally, the provision of a dedicated trail facility can greatly contribute to the public's perceived safety of walking and biking activity and providing a level-of-service A experience for users.

**C. Consistency & Contributions to Transportation-focused Metro Vision Objectives**

WEIGHT **20%**

Provide **qualitative and quantitative** responses (derived from Part 4 of the application) to the following items on how the proposed project contributes to Transportation-focused Objectives (in bold) in the adopted Metro Vision plan. Refer to the expanded Metro Vision Objective by clicking on links.

**MV objective 2****Contain urban development in locations designated for urban growth and services.**

1. Will this project help focus and facilitate future growth in locations where urban-level infrastructure already exists or areas where plans for infrastructure and service expansion are in place?

☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

The area that the project will traverse is currently a mixture of industrial, commercial and residential development. Population and employment totals for this area are projected to be 18,200 by the year 2020, and 26,000 by the year 2040. The area has been urbanized with very few pockets of land nearby that remain undeveloped. Fortunately, the canal corridor has been protected from development and is now primed for trail purposes. The future trail is expected to become an amenity that will compliment and provide links to other land uses.

Denver International Airport is located to the northeast of this area, along with the recently opened Gaylord Rockies Resort, an identified urban center place. Consequently, the area around DIA is experiencing rapid development and growth. Extending the High Line Canal Trail, which is unquestionably one of the most important trail corridors within Denver Metro Area, to this emerging urban center is of regional significance and priority.

Expanding the High Line Canal Trail by adding the segment proposed in this project is in close alignment with the multimodal transportation objectives of the Metro Vision 2040 Plan and Aurora Places, the City's recently adopted comprehensive plan. This segment will connect to a vast network of existing urban-level trail infrastructure, including the Sand Creek Greenway Trail and Colorado Front Range Trails. An exciting aspect of adding this small segment of the High Line Canal Trail is the exponential increase in accessibility to safe, developed trails for the area served by this trail.

Furthermore, regional greenway-oriented development can be a catalyst for growth, attracting employers and businesses due to the enhanced quality of life afforded by constructing this trail project.

**MV objective 3****Increase housing and employment in urban centers.**

2. Will this project help establish a network of clear and direct multimodal connections within and between urban centers, or other key destinations?

☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

Construction of the segment of the High Line Canal from East Colfax Avenue to I-70 will provide multimodal connectivity to the majority of the Denver Metro Area's urban centers, housing areas, and employment centers, such as the 40th/Airport Blvd./Gateway Park Urban Center, Gaylord Rockies Resort and Convention Center (1,500 employees), Denver International Airport (35,000 employees), CU Anschutz Medical Campus and Fitzsimons Innovation Community (25,000 employees) and Colfax Corridor Urban Center, by way of the existing trail network, light rail, and commuter rail lines. It will directly connect a currently isolated section of the High Line Canal Trail, providing access to the greater Denver Metro Area trail network. In addition, the residents and employees south of I-70 will have a safe, dedicated pedestrian/bicycle crossing of I-70, which will provide easier access to the A Line commuter rail, which has an estimated 18,600 passenger trips per day and connects Denver International Airport and Denver Union Station, and the rest of the RTD commuter rail/light rail system.

The location of this project is such that users of the proposed trail link can easily travel beyond the Adams County subregion (population est. 503,167) and into the Arapahoe County (population est 643,052) and Denver County (population est. 704,621) subregions. See Attachment B, "Regional Context Map".

<a href="#">MV objective 4</a>	<b>Improve or expand the region's multimodal transportation system, services, and connections.</b>	
3.	Will this project help increase mobility choices within and beyond your subregion for people, goods, or services?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe, including supporting quantitative analysis		
<p>This project will enhance mobility choices for people within the region, primarily, the option to safely cross the Interstate 70 ROW by foot or bicycle to access area shopping centers, medical centers, and recreation centers. On completion of a grade-separated crossing of I-70, pedestrians and cyclists south of the Interstate will have a safer access to the rail station at 40<sup>th</sup> Avenue and Airport Boulevard and those north of the Interstate will have safer access to the Denver Metro trail system. Dependence on motorized vehicles is somewhat governed by the lack of alternatives. Making bicycling and walking a viable option will increase mode shift as a personal choice. US Census statistics show that there are 132 households without motor vehicle ownership within a mile of the project. Currently these residents, and others without access to a motor vehicle, are most likely to take transit to work, and will be better able to access the light rail and bus services via the improved trail connectivity.</p>		
<a href="#">MV objective 6a</a>	<b>Improve air quality and reduce greenhouse gas emissions.</b>	
4.	Will this project help reduce ground-level ozone, greenhouse gas emissions, carbon monoxide, particulate matter, or other air pollutants?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe, including supporting quantitative analysis		
<p>By linking to regional trail systems, and especially by providing a safe crossing of I-70 and East Colfax Avenue, this project will encourage local residents to walk or cycle to work, shopping centers, medical centers, and other destinations instead of using a motor vehicle. Easier, safer access to commercial and recreation facilities could significantly reduce greenhouse gas emissions by as much as 152 lbs. GHG daily (431 lbs. GHG daily by the year 2040). On the weekends, because of the vastly improved access to High Line Canal Trail and the Aurora Sports Complex, the environmental benefits would be substantially higher.</p>		
<a href="#">MV objective 7b</a>	<b>Connect people to natural resource or recreational areas.</b>	
5.	Will this project help complete missing links in the regional trail and greenways network or improve other multimodal connections that increase accessibility to our region's open space assets?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe, including supporting quantitative analysis		
<p>One of the major benefits of this project is the fact that it will fill in the most costly, difficult and missing link in the High Line Canal Regional Trail corridor. The High Line Canal is 71-miles that begins to the west at Waterton and winds its way through the Denver Metro Area along the High Line Canal Regional Trail corridor. Numerous other trails connect to the High Line Canal Trail at the nearby Triple Creek Trailhead, including the Sand Creek Greenway Trail, Star K Connection Trail, Triple Creek Greenway Trail, Springhill Park Trail, and Sports Park Connector Trail. On completion of the I-70 to East Colfax Avenue segment of the HLC Trail, local residents will have safe, easy access to these trails, and in turn, to nearby Beck Recreation Center, Colorado Freedom Memorial, Aurora Sports Park, Sand Creek Riparian Preserve, Springhill Golf Course and Park, Upland Park, Terrace Park, and a vast number of other open space, recreation, and park areas that are connected to the HLC Trail across the Denver Metro Area. Other nearby open space assets include Rocky Mountain Arsenal National Wildlife Refuge nearby to the north and the Plains Conservation Center to the south. These areas will also be made more accessible by trail connectivity.</p>		

Interconnectivity to the regional trail network will improve access to the preserved natural resources associated with the greenways through which the trails pass, particularly the Sand Creek Regional Greenway and Triple Creek Greenway Corridor.

[MV objective 10](#)

**Increase access to amenities that support healthy, active choices.**

6. Will this project expand opportunities for residents to lead healthy and active lifestyles?

☒ Yes ☐ No

*Describe, including supporting quantitative analysis*

Investing in facilities that promote walking, biking, and other active outdoor activities by the members of a community has been shown to produce significant health benefits. It has been shown that increased physical activity, such as walking and biking, can lead to lower mortality rates by reducing the severity of the risks of many chronic diseases such as heart disease and diabetes. Based on the Demographic Statistical Analysis of the United States, approximately 800 people live within 1/4 mile of the proposed trail extension, giving them easy access to a safe, low-stress mode of outdoor physical activity.

One in four children in the State of Colorado are overweight or obese and spend only an average of four to seven minutes in unstructured, outdoor play time. The City of Aurora has recognized the urgency to make more outdoor recreation opportunities available to all residents, including those under the age of 18. There are 81 children who reside in the Tower Triangle neighborhood and 9,210 children in the Green Valley Ranch neighborhood. These children and their families will, when this project is completed, have access to the High Line Canal Trail, providing a safe, inexpensive source of exercise.

This project seeks to improve the safety, comfort, and convenience for bicyclists and pedestrians, thereby encouraging increased physical activity for both transportation and recreational purposes, which lead to healthy and active lifestyles.

[MV objective 13](#)

**Improve access to opportunity.**

7. Will this project help reduce critical health, education, income, and opportunity disparities by promoting reliable transportation connections to key destinations and other amenities?

☒ Yes ☐ No

*Describe, including supporting quantitative analysis*

The proposed segment of the High Line Canal is located in Aurora, Colorado, which is the most culturally diverse city in the Denver Metro area. Aurora was recently ranked as 9th in neighborhood diversity, and as the 10th most integrated in the nation's 100 most populous cities. The median income of Aurora residents is slightly lower than that of the greater metro area. The proposed segment of trail will be a concrete surface, graded to ADA standards, and will traverse residential, commercial, and industrial areas, opening up opportunities for multimodal transportation for the residents as both consumers and employees. For example, nearby Buckley Airforce Base currently employs 2,400 civilians and 2,500 contractors along with active duty personnel. Providing reliable multimodal transportation connections to the air force base will reduce the opportunity disparities for those with limited access to a motor vehicle.

US Census data shows that there are 132 households without motor vehicle ownership within a mile of the project. Currently, these residents, and others without access to a motor vehicle are required to traverse busy Tower Road, with several at-grade crossings, in order to enjoy the opportunities and benefits of the area across I-70. The reliable transportation connections provided by this project will eliminate the obstacles and connect the residents to these opportunities, including eight medical centers, a library, a rail station, and numerous bus stops and therefore, help to reduce critical health, education, income, and opportunity disparities.

[MV objective 14](#)

**Improve the region's competitive position.**

8. Will this project help support and contribute to the growth of the subregion's economic health and vitality?

☒ Yes ☐ No

*Describe, including supporting quantitative analysis*

The World Health Organization developed the Health Economic Assessment Tool in 2009 to enable government and recreation agencies to estimate how reduced mortality resulting from an increase in physical activity can benefit the local economy. In 2014, this tool was applied to the state of Colorado, resulting in an annual estimated benefit of \$3.2 billion. (Economic and Health Benefits of Bicycling and Walking, BBC Research & Consulting, October 2016.)

Increased sales and expenditures at local business establishments by trail patrons are anticipated. Also, increased consumer spending by the population on clothing, equipment, and gear related to trail user needs is anticipated.

Population and employment totals for this area are projected to be 18,200 by the year 2020, and 26,000 by the year 2040. Maintaining a safe and reliable multimodal transportation network has been shown to be a key component in attracting and retaining employers and employees. Demonstration of commitment to upgrading and maintaining the transportation infrastructure is a catalyst for positive growth in a region. These trails are regional assets, providing great economic benefit in attracting employers, which leads to vibrant communities.

**D. Project Leveraging**

**WEIGHT 10%**

9. What percent of outside funding sources (non-DRCOG-allocated Subregional Share funding) does this project have?

32

60%+ outside funding sources ..... High  
30-59% ..... Medium  
29% and below ..... Low

**Part 3 Additional Considerations**

The ADCOG Subregional Forum has established five additional considerations to guide project selection within the subregional process. These considerations may be used by the ADCOG Subregional Forum in the project evaluation process in combination with the above listed criteria. The five additional considerations are:

- Does the project benefit a small community, which for this process is defined as a community with a population of less than 50,000 people? No
- Is this project a suburban connector? Yes. This project will connect the Green Valley Ranch and Tower Triangle areas as well as the northeast suburban and Aerotropolis areas to the greater Denver Metro Area trail network, providing easier access and increasing opportunities for families and other groups to enjoy facilities.
- Does the project address a gap in existing service? Yes. This project will fill in the most costly, difficult and missing link in the High Line Canal Regional Trail corridor by constructing an underpass at I-70.
- Is this the logical next step of a project? Yes. The city of Aurora engaged the services of an engineering firm to refine the proposed alignment of the trail and prepare 60% design plans with construction cost estimates.

- Is the project construction ready? Yes. Upon receipt of TIP funding, the city of Aurora is prepared to immediately move into final design and then construct this 1.8 mile trail.

Applicants may provide an attachment to the application to address these additional considerations. See Attached Letters of Support.

<b>Part 4</b>	<b>Project Data Worksheet – Calculations and Estimates</b> <i>(Complete all subsections applicable to the project)</i>
---------------	---

### A. Transit Use

1. Current ridership weekday boardings	N/A
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	11000	7200	<b>18200</b>
2040	16500	9500	<b>26000</b>

Transit Use Calculations	Year of Opening	2040 Weekday Estimate
3. Enter estimated additional daily transit boardings after project is completed. <i>(Using 50% growth above year of opening for 2040 value, unless justified)</i> <i>Provide supporting documentation as part of application submittal</i>	0	0
4. Enter number of the additional transit boardings (from #3 above) that were previously using a different transit route. <i>(Example: {#3 X 25%} or other percent, if justified)</i>	0	0
5. Enter number of the new transit boardings (from #3 above) that were previously using other non-SOV modes (walk, bicycle, HOV, etc.) <i>(Example: {#3 X 25%} or other percent, if justified)</i>	0	0
6. = Number of SOV one-way trips reduced per day (#3 – #4 – #5)	<b>0</b>	<b>0</b>
7. Enter the value of {#6 x 9 miles}. (= the VMT reduced per day) <i>(Values other than the default 9 miles must be justified by sponsor; e.g., 15 miles for regional service or 6 miles for local service)</i>	0	0
8. = Number of pounds GHG emissions reduced (#7 x 0.95 lbs.)	<b>0</b>	<b>0</b>
9. If values would be distinctly greater for weekends, describe the magnitude of difference:		
10. If different values other than the suggested are used, please explain here:		

### B. Bicycle Use

1. Current weekday bicyclists:	High Line Canal Trail east of Ensenada Street	14
	High Line Canal Trail north of 14 <sup>th</sup> Drive	2



## 2. Population and Employment

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	11000	7200	18200
2040	16500	9500	26000

Bicycle Use Calculations	Year of Opening	2040 Weekday Estimate
3. Enter estimated additional weekday one-way bicycle trips on the facility after project is completed.	200	600
4. Enter number of the bicycle trips (in #3 above) that will be diverting from a different bicycling route. (Example: <b>{#3 X 50%}</b> or other percent, if justified)	100	300
5. = Initial number of new bicycle trips from project (#3 – #4)	100	300
6. Enter number of the new trips produced (from #5 above) that are replacing an SOV trip. (Example: <b>{#5 X 30%}</b> (or other percent, if justified)	33	100
7. = Number of SOV trips reduced per day (#5 - #6)	67	200
8. Enter the value of <b>{#7 x 2 miles}</b> . (= the VMT reduced per day) (Values other than 2 miles must be justified by sponsor)	134	400
9. = Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)	127.3	380
10. If values would be distinctly greater for weekends, describe the magnitude of difference:		
11. If different values other than the suggested are used, please explain here:		

## C. Pedestrian Use

2. Current weekday pedestrians:	High Line Canal Trail east of Ensenada Street	36
	High Line Canal Trail north of 14 <sup>th</sup> Drive	20
3. Population and Employment		

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	11000	7200	18200
2040	16500	9500	26000

Pedestrian Use Calculations	Year of Opening	2040 Weekday Estimate
3. Enter estimated additional weekday pedestrian one-way trips on the facility after project is completed	200	400
4. Enter number of the new pedestrian trips (in #3 above) that will be diverting from a different walking route (Example: <b>{#3 X 50%}</b> or other percent, if justified)	100	200



5. = Number of new trips from project (#3 – #4)	100	200
6. Enter number of the new trips produced (from #5 above) that are replacing an SOV trip. (Example: <b>{#5 X 30%}</b> or other percent, if justified)	33.3	66.67
7. = Number of SOV trips reduced per day (#5 - #6)	66.67	133.33
8. Enter the value of <b>{#7 x .4 miles}</b> . (= the VMT reduced per day) (Values other than .4 miles must be justified by sponsor)	26.67	53.32
9. = Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)	25.33	50.66
10. If values would be distinctly greater for weekends, describe the magnitude of difference:  It is estimated that there will be at least a 10% increase on weekends due to improved access to the Aurora Sports Park.		
11. If different values other than the suggested are used, please explain here:		

## D. Vulnerable Populations

	Vulnerable Populations	Population within 1 mile
Use Current Census Data	1. Persons over age 65	619
	2. Minority persons	7238
	3. Low-Income households	367
	4. Linguistically-challenged persons	1103
	5. Individuals with disabilities	319
	6. Households without a motor vehicle	132
	7. Children ages 6-17	2096
	8. Health service facilities served by project	8

## E. Travel Delay (Operational and Congestion Reduction)

Sponsor must use industry standard Highway Capacity Manual (HCM) based software programs and procedures as a basis to calculate estimated weekday travel delay benefits. *DRCOG staff may be able to use the Regional Travel Model to develop estimates for certain types of large-scale projects.*

1. Current ADT (average daily traffic volume) on applicable segments (Tower Road)	23722
2. 2040 ADT estimate	N/A
3. Current weekday vehicle hours of delay (VHD) (before project)	N/A

Travel Delay Calculations	Year of Opening
4. Enter calculated future weekday VHD (after project)	N/A
5. Enter value of <b>{#3 - #4}</b> = Reduced VHD	N/A
6. Enter value of <b>{#5 X 1.4}</b> = <b>Reduced person hours of delay</b> (Value higher than 1.4 due to high transit ridership must be justified by sponsor)	N/A

7. After project peak hour congested average travel time reduction per vehicle (includes persons, transit passengers, freight, and service equipment carried by vehicles). <i>If applicable, denote unique travel time reduction for certain types of vehicles</i>	N/A
8. If values would be distinctly different for weekend days or special events, describe the magnitude of difference.	
9. If different values other than the suggested are used, please explain here:	

## F. Traffic Crash Reduction

1. Provide the current number of crashes involving motor vehicles, bicyclists, and pedestrians on Tower Road from E. Colfax to I-70 ( <i>most recent 5-year period of data</i> )		
<b>Fatal</b> crashes (There were two pedestrian fatalities at Tower Rd. and I-70, and two bicycle fatalities at Smith Rd. and Tower Rd.)	18	
<b>Serious Injury</b> crashes	11	
<b>Other Injury</b> crashes	38	
<b>Property Damage Only</b> crashes	689	
2. Estimated reduction in crashes <u>applicable to the project scope</u> ( <i>per the five-year period used above</i> )		
<b>Fatal</b> crashes reduced (Grade-separated crossings create a 90% reduction in pedestrian fatal/injury accidents.)	1.8	
<b>Serious Injury</b> crashes reduced	N/A	
<b>Other Injury</b> crashes reduced	N/A	
<b>Property Damage Only</b> crashes reduced	N/A	

Sponsor must use industry accepted crash reduction factors (CRF) or accident modification factor (AMF) practices (*e.g., NCHRP Project 17-25, NCHRP Report 617, or DiExSys methodology*).

## G. Facility Condition

Sponsor must use a current industry-accepted pavement condition method or system and calculate the average condition across all sections of pavement being replaced or modified.  
Applicants will rate as: Excellent, Good, Fair, or Poor

### Roadway Pavement

1. Current roadway pavement condition	N/A Choose an item
2. Describe current pavement issues and how the project will address them. N/A	
3. Average Daily User Volume	N/A

### Bicycle/Pedestrian/Other Facility

4. Current bicycle/pedestrian/other facility condition	N/A Choose an item
--	--------------------

5. Describe current condition issues and how the project will address them. N/A	
6. Average Daily User Volume	N/A
<b>H. Bridge Improvements</b>	
1. Current bridge structural condition from CDOT N/A	
2. Describe current condition issues and how the project will address them. N/A	
3. Other functional obsolescence issues to be addressed by project N/A	
4. Average Daily User Volume over bridge	N/A
<b>I. Other Beneficial Variables</b> <i>(identified and calculated by the sponsor)</i>	
1.	
2.	
3.	
<b>J. Disbenefits or Negative Impacts</b> <i>(identified and calculated by the sponsor)</i>	
1. Increase in VMT? <i>If yes, describe scale of expected increase</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. Negative impact on vulnerable populations	
3. Other:	





**DRCOG 2020-2023  
TRANSPORTATION IMPROVEMENT PROGRAM**

**Adams County Subregional Share Project**

**Aurora High Line Canal Trail –  
East Colfax Avenue to Interstate 70**

**Attachment A – Project Site Plan**





Trail to be constructed 2019

Utilize existing trail underpass

Pedestrian Hybrid Beacons

High Line Canal

Green Valley Ranch

Upland Park

Terrace Park

Sports Park

Sand Creek Greenway Trail

High Line Canal Trail

High Line Canal Trail

Triple Creek Trail

Sports Park Connector



# High Line Canal Trail Colfax To I-70 Project Site Plan

Parks, Recreation & Open Space Department  
February, 2019

Attachment A

- At-Grade Railroad Crossing
- At-Grade Street Crossing
- Culvert Crossing
- Proposed Trail Underpass
- Proposed Trail Alignment
- Existing Trail
- Current Canal Alignment
- TIP Project Boundary
- Developed Park
- Undeveloped Park Land
- Open Space

Aerial Photography: Spring 2018

0 200 400 800 Feet



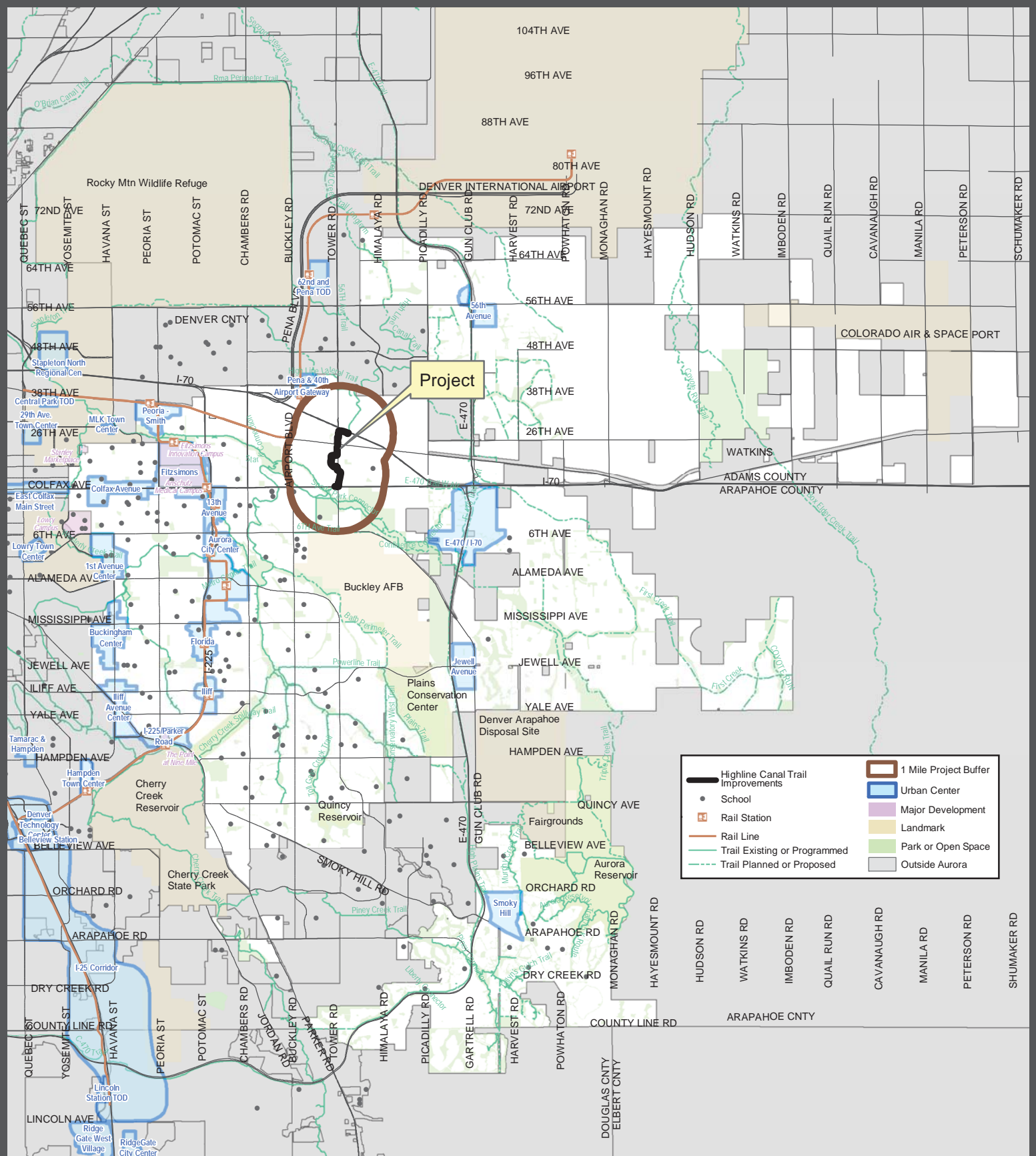


**DRCOG 2020-2023  
TRANSPORTATION IMPROVEMENT PROGRAM**

**Adams County Subregional Share Project**

**Aurora High Line Canal Trail –  
East Colfax Avenue to Interstate 70**

**Regional Context Map**



## Planning & Development Services

15151 E. Alameda Pkwy  
Aurora CO 80012 USA  
[www.auroragov.org](http://www.auroragov.org)  
303-739-7250  
[GIS@auroragov.org](mailto:GIS@auroragov.org)

## City of Aurora, Colorado

Adams Subregional Forum DRCOG TIP 2020-2023  
Highline Canal Trail Improvement



February 22, 2019

*Aurora is  
Worth Discovering!*



Miles 0 1.5 3





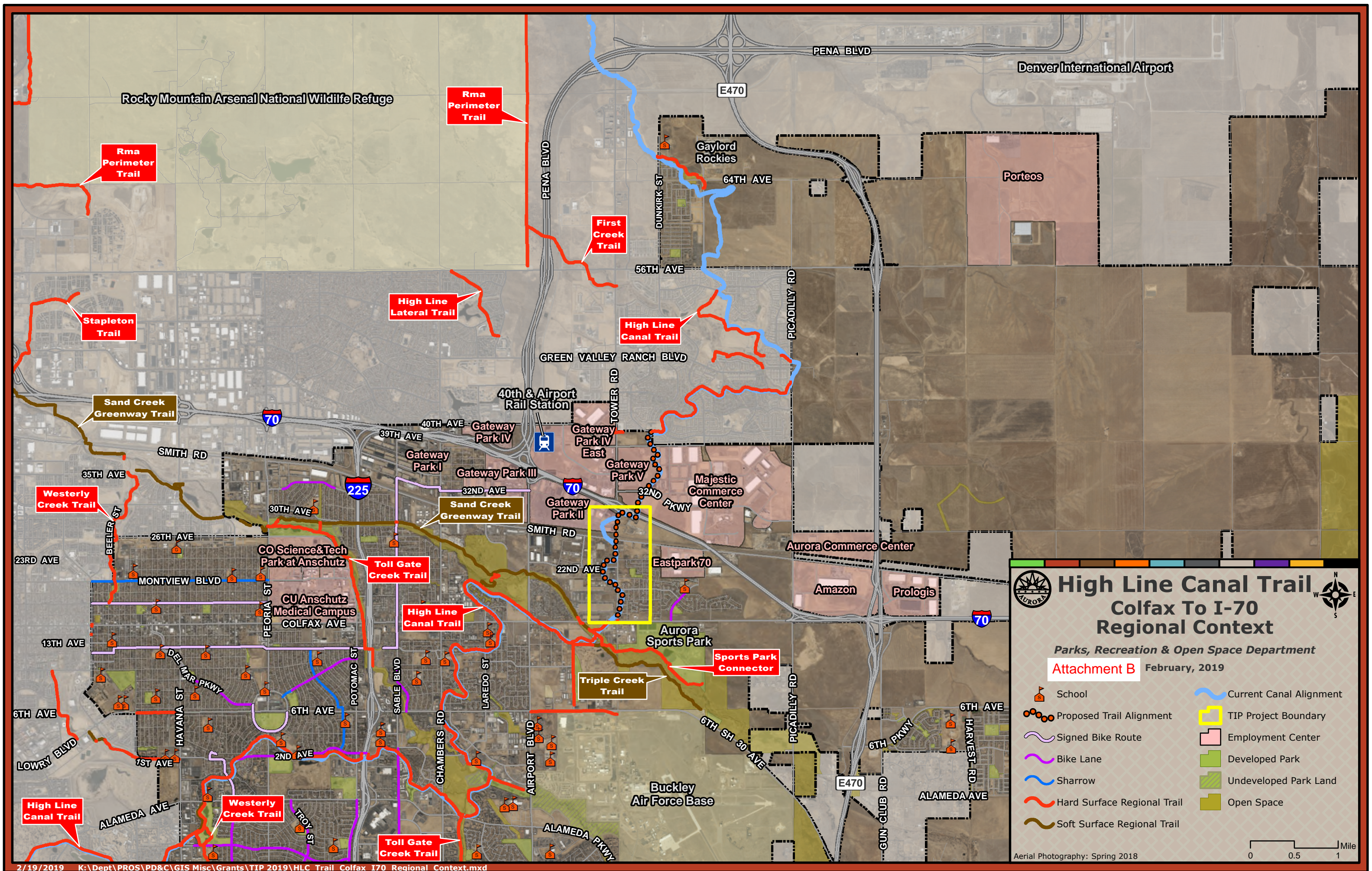
**DRCOG 2020-2023  
TRANSPORTATION IMPROVEMENT PROGRAM**

**Adams County Subregional Share Project**

**Aurora High Line Canal Trail –  
East Colfax Avenue to Interstate 70**

**Regional Context**









**DRCOG 2020-2023  
TRANSPORTATION IMPROVEMENT PROGRAM**

**Adams County Subregional Share Project**

**Aurora High Line Canal Trail –  
East Colfax Avenue to Interstate 70**

**Attachment C - Community Vision for the High Line Canal**



Charting Our Course  
for the Next Century

# Community Vision for the High Line Canal

December 2016 DRAFT





VISION STATEMENT

The High Line Canal’s 71 meandering miles will be preserved and enhanced as a cherished greenway that connects people to nature and binds varied communities together from the foothills to the plains.

As is the case with the more worthwhile journeys in life, “Adventure on the High Line Canal” began with establishing the context of the scene (the Canal) and featured characters (its wildlife and communities). Along the way, it offered various choices, bends and forks. Ultimately, it concluded with a satisfying resolution—a Vision that captures the community’s hopes and dreams for the future. This Vision is embedded in the Vision Statement and Guiding Principles.

GUIDING PRINCIPLES



**NATURAL**  
To preserve the natural character of the Canal, ensuring it continues to be a natural refuge for the region’s population and wildlife. The Canal’s natural, scenic beauty is integral to its identity.



**CONNECTED & CONTINUOUS**  
To maintain and increase the connectivity of the Canal along all 71 miles, preserving and enhancing the Canal’s use as an important continuous resource and part of the regional environmental and trail network.



**VARIED**  
To respect the variety of communities and experiences along the Canal and to preserve its various physical characteristics of the different character zones through the course of its 71 miles.



**MANAGED**  
To work together in order to preserve and support a long-term, sustainable future for generations to come. Our Canal is a critical, cherished asset for the region.

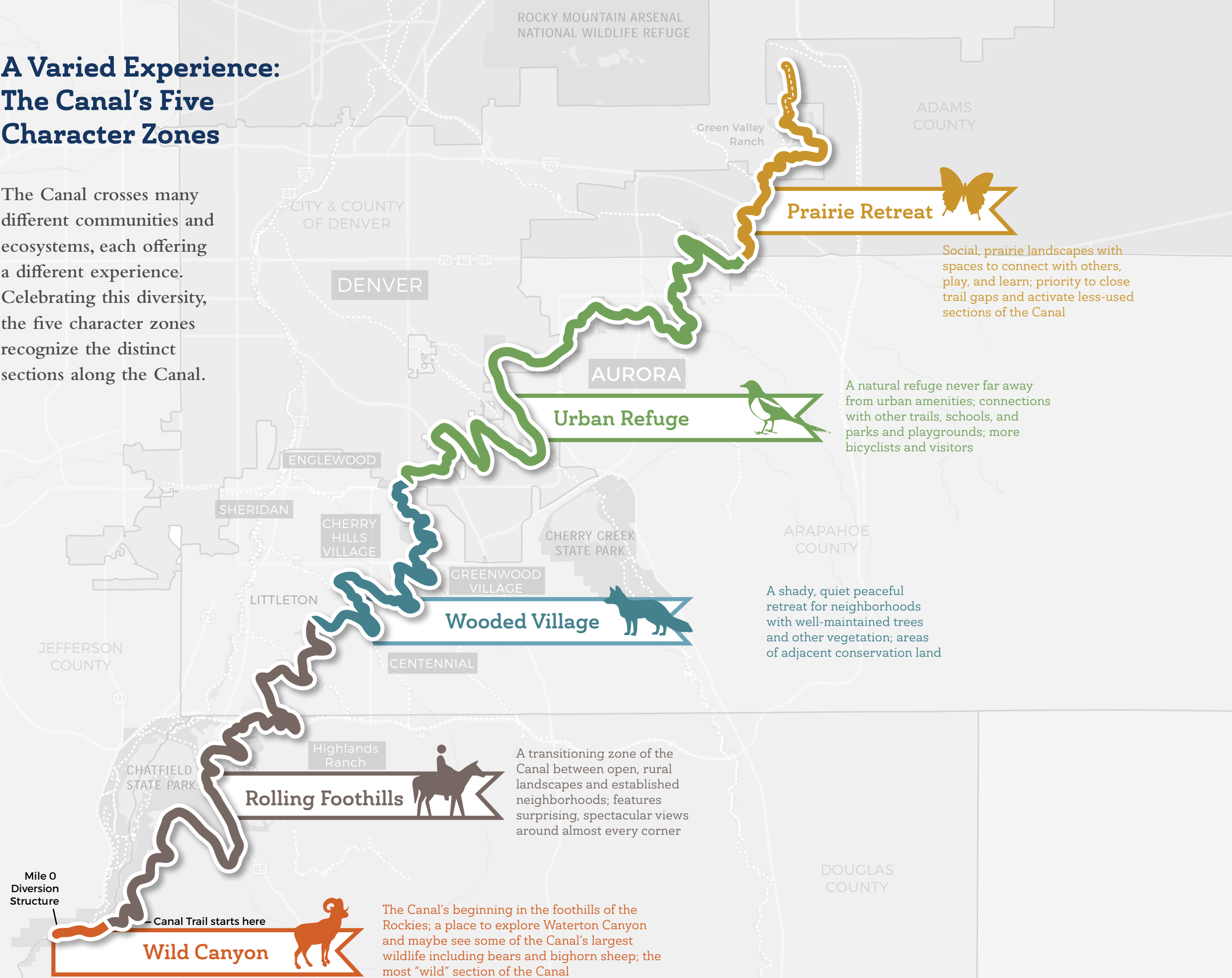


**ENHANCED**  
To enhance the enjoyment and use of the Canal in keeping with its natural and varied character.



# A Varied Experience: The Canal's Five Character Zones

The Canal crosses many different communities and ecosystems, each offering a different experience. Celebrating this diversity, the five character zones recognize the distinct sections along the Canal.



## High Line Canal Quick Facts

Date of origination: 1880s

Length: 71 miles

Total area: 860 acres, slightly larger than New York's Central Park

Owner: The Canal is primarily owned by Denver Water

Jurisdictions: The course of the Canal touches Adams, Arapahoe, Denver, and Douglas counties, passing through Aurora, Centennial, Cherry Hills Village, Denver, Greenwood Village, Highlands Ranch Metro District, and Littleton, and South Suburban Parks and Recreation District.

Number of street crossings: 80

Residents within one mile: well over 350,000 residents

Annual number of people who use the Canal recreationally: More than 500,000

Adjacent to 73 different green spaces ranging from pocket parks to state parks with a total sum of 8,070 acres.

199 species of birds, 28 mammals, and 15 reptiles call the Canal home.

23,760 trees with trunks greater than 6" in diameter\*

\* Source: Tree Inventory (preliminary data)



**DRCOG 2020-2023  
TRANSPORTATION IMPROVEMENT PROGRAM**

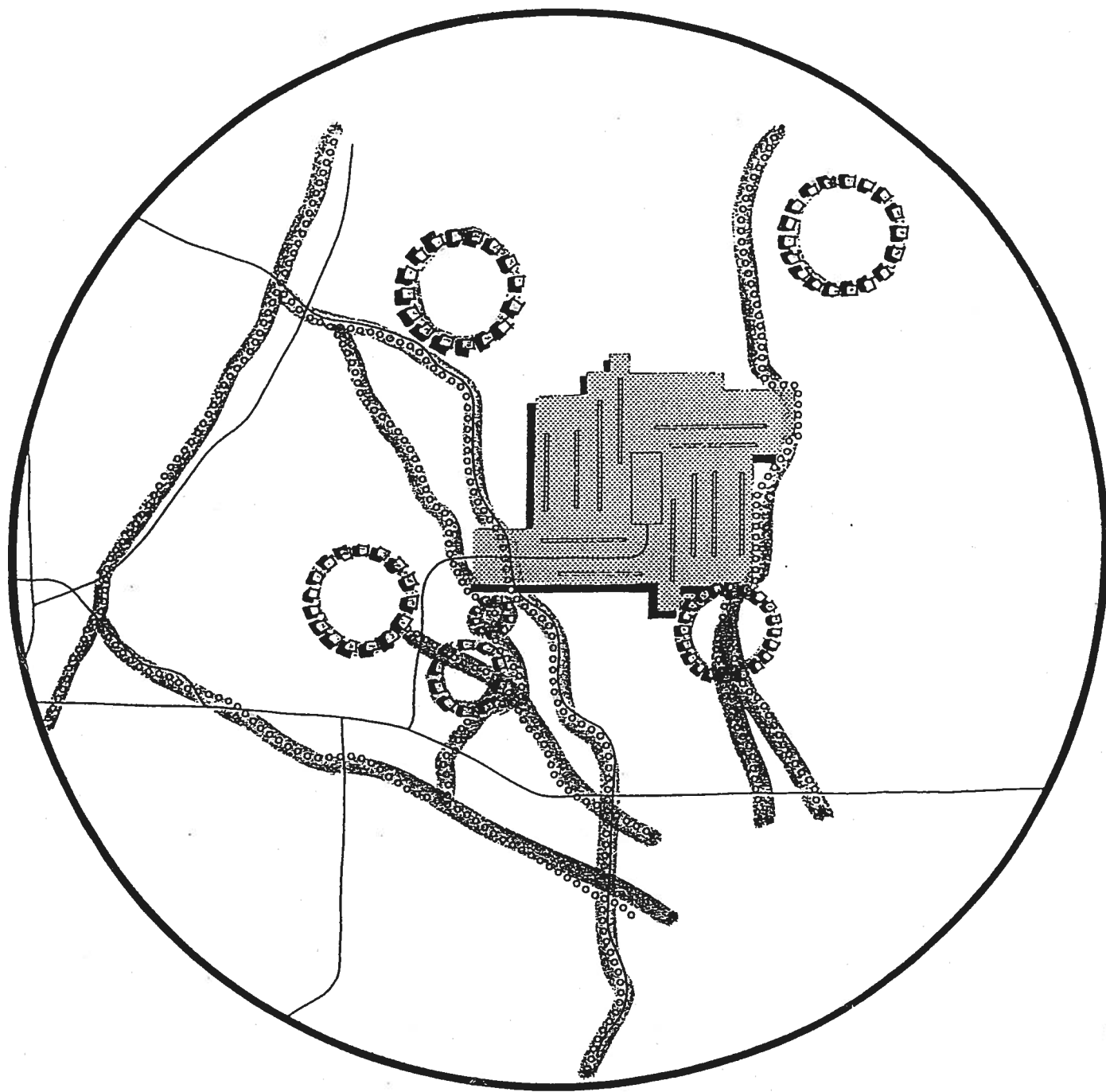
**Adams County Subregional Share Project**

**Aurora High Line Canal Trail –  
East Colfax Avenue to Interstate 70**

**Attachment D – The Emerald Strands**

# The Emerald Strands

A Cooperative Park, Open Space, and Trail Plan  
for the Area Surrounding the new Denver International Airport



Prepared by:

The Parks, Planning, and Gateway Development Staffs of  
Adams County, Aurora, Brighton, Commerce City, and Denver



**THE EMERALD STRANDS**

**A Cooperative Park, Open Space, and Trail Plan  
for the Area Surrounding the new Denver International Airport**

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Adams County, Aurora, Brighton, Commerce City, and Denver**

**February 1990**

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This plan was prepared by a Parks Subcommittee made up of members of the Airport Technical Advisory Committee assisted by additional staff from the various jurisdictions represented on the Committee.

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## I. INTRODUCTION/EXECUTIVE SUMMARY

If experience in Atlanta and Dallas/Forth Worth is any guide, the Denver area can expect to see significant urban development associated with the new Denver International Airport. New businesses lured to Atlanta by Hartsfield Airport represent an investment of \$3.3 billion and have created 54,000 new jobs. Las Colinas near the Dallas/Ft. Worth airport has grown into a community of 25,000 people and 25,000 jobs in just 15 years. Several recent market studies of the Denver airport environs confirm this great potential. Locally, much of this development will take place across jurisdictional boundaries in Adams County, Aurora, Brighton, Commerce City, and Denver in what has come to be known as the airport environs--thousands of acres of undeveloped land located roughly 10 miles northeast of the existing Stapleton airport (as depicted on the attached map).

Through a staff-level advisory committee, these communities have been working together closely for the past six months on a variety of airport-related land-use issues. For example, they have spent a good deal of time discussing ways to ensure that the road system each jurisdiction is contemplating is compatible with those of the others. They have also discussed coordination on development regulations, design standards, and construction road coordination. Parks and trails is another issue that has been high on their common agenda.

Probably nothing will be more important in setting an attractive framework for development and creating a distinctive, quality image than the park, open space, and trail system that each jurisdiction will put in place. Clearly, an inviting park system will add much to the quality of life of the many people who will call the environs their home or workplace. This is particularly important in a quadrant of the metropolitan area that currently has a dearth of parks, trails, and recreational opportunities. The system proposed here can forge the missing link in a great metropolitan regional system. By connecting the Highline Canal to the south and the Platte River Greenway to the northwest with an emerald strand of parks, trails, and recreational sites, the plan will enable citizens of the Denver area to hike and bike in a circuit around the region. Study after study demonstrates that quality of life and economic development are inextricably linked. Amenities like parks and trails have helped communities such as Highlands Ranch, Las Colinas near Dallas, and Columbia, Maryland, capture an inordinate regional share of quality development--both residential and business. As a just-completed airport market study for Aurora, Adams County, and Commerce City concluded, if the new airport environs is to compete with the more successful, established developments in the region, it must create a distinctive, high-quality image. A first-class park and trail system is an essential element in that equation.

Creating a vision for a truly excellent regional park and trail system and crafting the institutional mechanisms needed to make it happen can also go a long way towards reaffirming that the Front Range communities can indeed handle growth in a creative, environmentally sensitive fashion. This is a once-in-a-generation opportunity to demonstrate that growth can take place without despoiling the environment and still be economically successful. The successful coexistence of a healthy economy and a beautiful, healthy environment should be the hallmark of Colorado.

None of this can happen without a high level of coordination and cooperation among the airport environs jurisdictions. Each locality can address the needs of citizens who will reside within its boundaries, but the likely result will be a fragmented, unconnected non-system of small neighborhood and community parks that do not add up to anything substantial or special. That will be a terrible missed opportunity.

To date, there has been an exemplary level of cooperation among the airport-area local governments on a range of issues, including parks and trails. Made up of key planning and development staff members from each jurisdiction, the Airport Technical Advisory Committee (ATAC) has developed a set of goals to guide its parks planning and development effort:

- To create a park and open space system as a way to encourage the best possible urban development
- To recognize the semi-arid character of the region while protecting the unique and fragile natural resources and views and historic features in the area
- To provide for the needs of existing and future residents for large regional park amenities, natural open spaces, and trails
- To provide links with other metropolitan-area trails and open spaces as well as a system that allows people to move about the area on a series of trail loops designed for pedestrians, bicyclists, and equestrians
- To develop a system that is economically feasible and affordable to create and maintain

Using these goals, and based on field work, natural resource surveys, and discussions with state and federal agencies, the group worked together to identify key potential regional parks, trail segments, environmentally sensitive areas, and necessary links between locally planned open spaces. The group has also examined opportunities for jointly funded and managed parks,

developed construction standards for trails, and worked towards more uniform impact fee and dedication requirements. The result is the plan presented in this report and depicted on the attached map.

Of course, this plan does not stand alone. It draws upon and develops to a new level of detail a number of other master plans. One is the draft Airport Environs Concept Plan (Dec. 1988) developed by Adams County, and the Cities of Aurora, Brighton, and Commerce City. Another is the preliminary Airport Gateway Concept Plan (March, 1989) developed by the Denver Office of Airport Gateway Development and the Denver Planning Office. That plan implements the recommendations in the Denver Park, Recreation, and Open Space Master Plan (October, 1986).

For the most part, this plan focuses on elements and amenities that are interjurisdictional in nature--including large parks and open spaces, connecting trails, and athletic complexes. Recommendations for community and neighborhood parks that are typically the responsibility of one jurisdiction are not the focus of this document, although in some instances they are critical elements of the overall network. Such parks shall remain the responsibility of each locality.

This proposal is but a starting point for public discussion and, we hope, official action. But it presents a common vision and sets forth a series of specific steps that will allow each jurisdiction to move forward cooperatively towards a system worthy of the great parks and trails tradition of the Denver metropolitan area. We should not settle for less.

## II. A THUMBNAIL SKETCH OF THE NATURAL AND HISTORIC AREAS AND RESOURCES OF THE AIRPORT ENVIRONS

The Denver International Airport environs encompasses an area as large as the developed portions of Denver, Aurora, and Lakewood, but it remains uncharted territory to most Denver-area residents. People know the new airport will be built somewhere out past Stapleton, north of I-70. They catch a glimpse of the land as they rush by on the interstate highway or as they bank over it for landings at Stapleton, vaguely aware of the treeless, rolling dry farmland and prairie. But the environs have some truly remarkable resources.

The crown jewels of the area are Barr Lake State Park and--potentially--the Rocky Mountain Arsenal. These large open spaces--2700 and 17,000 acres respectively--provide some of the richest wildlife habitats in the entire state. Deer, coyote, fox, eagles, hawks, and fish are just a sampling of the wildlife that abounds. Barr Lake, heavily used, is flanked by extensive marshes and is a bird watchers paradise. It is home to the Front Range's only pair of nesting bald eagles, something particularly remarkable in light of the fact that there are only ten pair of nesting bald eagles in the entire state, the rest on the more remote Western Slope. Duck hunting is popular and the catfishing is renowned.

The Arsenal, when clean-up is completed, promises to be a national-class urban wildlife and nature preserve. Several dozen bald eagles roost on the site during the winter. Hundreds of mule and whitetail deer range the Arsenal as well as many smaller animals. Even before the clean-up is completed, the Arsenal will provide magnificent views, across its spectacular prairie landscape of the Rocky Mountains as visitors drive into Denver from the new airport.

Both Barr Lake and the Arsenal present challenges and opportunities to weave them into a larger system and protect their habitat.

But there are some smaller hidden gems in the environs, as well, like tiny First Creek with its broad lush floodplain and magnificent groves of giant cottonwoods that provide cover and food for deer, hawks, owls, and other wildlife. Similarly, Box Elder creek on the eastern edge of the area serves as a wildlife corridor and haven. Virgin tracts of prairie in Adams County and Aurora frequented by antelope stand in contrast to the brown and gold checkerboard of farms. Historic farmsteads are dotted here and there--old barns, an important canal, and even an old roadhouse--that tell of the fascinating farming and pioneer history of this area.



And no one can ignore the magnificent mountain views from environs high points--like that found near the corner of 64th Avenue and Piccadilly--views that stretch from Pikes Peak to the south to Longs Peak to the north, all framing the striking skyline of downtown Denver.

There are also opportunities to reclaim and reshape damaged natural features so that they become important assets to newcomers and development. One example is Second Creek, which in places shows the deep scars of erosion.

The natural and historic resources of this soon-to-be regional gateway are quite remarkable and often surprising. With a strong vision, careful planning, and bold action, they can be protected and enhanced as part of a captivating regional park and trail system.

### III. DESCRIPTION OF PROPOSED REGIONAL PARK AND OPEN SPACE SYSTEM

The specific items included in this plan include (1) Regional Park and Open-Space Amenities, (2) Athletic Complexes, (3) Open-Space Corridors and Trails, and (4) Open-Space and Trail Development Standards.

#### A. Regional Park and Open-Space Amenities

The plan identifies the following six regional-scale park and open-space amenities that should be developed in the future as the environs area begins to build out.

##### **1. The Rocky Mountain Arsenal**

As continued clean-up efforts make portions of the Arsenal available, the southeastern corner should become a regional wildlife preserve. The design, location, and extent of that preserve should take into account the boundaries of uncontaminated areas, the extent of clean-up finally agreed upon, and the regional transportation needs between the Arsenal and the new airport and south of the Arsenal. State maintenance and operation of the area should also be considered. While the overall character of the preserve should be passive open-space and steps should be taken to ensure that bald eagles and other wildlife are not disturbed, the area should be enhanced by the addition of trails, picnic facilities, "primitive" camping improvements, nature education facilities, horse facilities and improvements to enhance the wildlife habitat.

The continuation of the First Creek open-space corridor and trail across the Arsenal from Airport Boulevard to the O'Brien Canal and South Platte River is critical not only for wildlife migration but also to complete the regional trail connection and loop system. Fences that would obstruct wildlife passage through the area should be discouraged.

##### **2. Barr Lake**

Barr Lake is a state park and wildlife area. The plan recommends an expansion of the buffer of publicly owned land around the lake to I-76 on the west, 144th Avenue on the north, Piccadilly on the east and 124th Avenue and E-470 on the south, adding approximately 1500 acres to the park. The larger buffer will protect the

wildlife and natural areas from urban activities and will allow the area to accommodate more visitors. Mitigation of wetlands disturbance by the E-470 Authority between E-470 and the lake will contribute to this expansion.

This plan recommends no change to the character and intensity of existing recreational uses. Emphasis should be placed on passive activities such as picnicing, bird watching, fishing, camping, walking, biking, and horseback riding.

### 3. Piccadilly Road and 64th Avenue

Even though it will be a small site, the Denver Water Department's water storage facility at this location could provide a unique regional amenity. Its location on the most notable high point in the vicinity affords spectacular views of the Rocky Mountains and the airport. The Denver Water Department has committed to acquiring an additional 10 acres, for a total of 20 acres at this site.

The plan recommends that this site be developed as a passive park, an overlook with viewing platforms, seating, rest area facilities, possibly visitor information, and parking for people who wish to enjoy the views. Further negotiations need to be undertaken with the Denver Water Department to ensure that the area can be used as a park.

### 4. Box Elder Creek Open-Space

Aurora intends to obtain a large, natural open space along Box Elder Creek between 56th Avenue and the airport. The extremely wide floodplain in portions of this area make it a unique habitat for some species of wildlife. Moreover, the location makes this park an ideal junction for an outer loop of trails continuing around the eastern and northern sides of the new airport to the Platte River trail system to the west.

Using floodplain dedications, 800 to 1000 feet can be obtained along the east branch of Box Elder Creek north from I-70, and 400 to 500 feet could be obtained along the west branch. A wider area would be acquired at the confluence of the two branches. We suggest that this open-space parcel would total approximately 100 acres in area.

In keeping with the natural character of the area, improvements would be limited. Picnic sites, interpretive trails, and a parking lot/trailhead for the Box Elder Creek trail would be the full extent of amenities provided.

#### 5. Adams County Prairie Parcel

The Adams County Parks Department currently wants to acquire a large "prairie" park north of the airport. That park would meet the needs of county residents for an unstructured open-space area that allows them to enjoy the experience of being in the high plains/prairie. At this time, no specific potential sites have been investigated. Adams County now believes that it may be possible to finance the park's acquisition and maintenance through its current dedication requirements and existing budgets.

#### 6. Denver's First Creek Park Complex

A major park and open-space complex is being planned by Denver's Office of Airport Gateway Development along First Creek in Green Valley Ranch. It will be comprised of a 60-acre community sized active park, a 40-acre nature and wildlife preserve, and a 170-acre golf course. These facilities are being sized, and their primary purpose will be, to serve the needs of new Denver residents in the Airport Gateway area. Aurora is anticipating that it will require open-space corridors with trails and detention ponds along the branches of First Creek near its boundary with Denver.

Taken together, these improvements would create a unique large park and open-space amenity. Given that Aurora's projected population in the immediate vicinity of First Creek will probably not support a regional-scale park or amenity on its own, the possibility of Aurora contributing to the Denver community park should be explored so that all area residents are well served without burdening any one jurisdiction.

#### B. Athletic Complexes

We estimate that the future population in the airport environs area will be sufficient to require two "regional" athletic complexes -- one to the north of the airport and one to the south. Such complexes are typically over 100 acres in size, contain banks of lighted ballfields designed for league and

competitive play, bleachers, concession stands, restroom facilities and parking. Because of the amount of activity they generate and the extended hours during which they operate, they require a location with good auto access surrounded by nonresidential uses. At this point, no specific sites have been identified.

This plan recommends that the northern complex be developed cooperatively by Adams County, Brighton, and Commerce City, and that the southern complex should become the responsibility of Aurora and Denver. Significant cost savings could occur through these joint efforts.

### C. Open-Space Corridors and Trails

An important element in the character of the metropolitan Denver area is the interwoven system of stream corridors. While small in scale and water volumes, they are extremely precious in an arid climate because of the riparian habitat and wildlife they sustain and the added enjoyment people gain from being close to water and nature. At present, wildlife migrate along many of the corridors.

Many of the stream corridors also serve as storm drainageways that will become increasingly important as the airport environs area develops. The Urban Drainage and Flood Control District has undertaken master planning efforts to determine what engineering, water quality, and flood control improvements will be necessary in the area. Those drainage master plans will affect where and how trails and open-space corridors are located and designed.

Because of their popularity, an extensive system of open-space and trails exists and is planned for the metro area. That system should be extended through the airport environs area to create coherent loops of open-space corridors and trails. This plan recommends that all stream corridors should be kept as open-space, but not all should be developed with trails. The recommended trail locations are shown on the attached map. Trail standards are described beginning on page 16.

Critical segments in the open-space corridor and trail network in the vicinity of the airport include (1) Off-Street Trails, (2) Detached Sidewalk (On-Street) Trails, (3) Equestrian Trails, and (4) Trailheads. Each of these are discussed in more detail below.

## 1. Off-Street Trails

The airport environs area contains seven important opportunities for off-street trails and open-space corridors that would knit the area together and offer a variety of nature experiences and access to historic sites to both residents and visitors. These seven areas are listed below.

### a. First Creek

This creek, which flows generally northwest into the southeast corner of the Rocky Mountain Arsenal, is the least disturbed and most beautiful stream corridor in the Denver portion of the airport environs. Although some erosion has taken place, the creek channel is still relatively narrow in many spots. Majestic stands of mature cottonwoods line the creek and shelter a thriving bird population by providing perches for eagles, hawks, and owls. Deer regularly move up and down the creek from their refuge on the Arsenal. Coyote, fox, and other mammals are also residents.

It is vital that First Creek, its riparian, wetland environments, and its vegetation be protected from urban disturbance. Parks and wildlife areas planned by Denver along the spine of the creek will help in this regard. However, as the creek passes through private land, open-space along its banks must be obtained. It is also important that water quality in the creek be regularly monitored to ensure that urban development not degrade the habitats along the creek or on the Arsenal.

The passage of the creek near major intersections at Tower Road/56th Avenue and Airport Boulevard/56th Avenue will create important challenges to accommodate both urban development and the natural environment. Any movement of the creek (to construct intersections, for instance), or construction of creek crossings (at Airport Boulevard, for instance) must be done with care to preserve water quality, vegetation, animal movements, pedestrian safety and aesthetics, and the integrity of the corridor as a natural open-space. Where the creek crosses major thoroughfares such as Tower Road, 56th Avenue, and Airport Boulevard, underpass structures should be designed to allow free passage of wildlife, pedestrians, bicyclists, and people on horseback.

Trails along the First Creek corridor will give residents of Aurora and Denver access to the development in the Denver Gateway area, trails in the Airport Boulevard Corridor, and trails and wildlife areas on the Arsenal.

b. Highline Canal and Lateral

The historic Highline irrigation canal is listed on the National Register of Historic Places and meanders for many miles through a large part of the metropolitan area. It begins in the south near Chatfield Reservoir and flows generally northeast to its confluence with Second Creek just south of Airport Boulevard.

Along much of its length, the engineered banks of the canal provide unique settings for trails with good views of both the canal and the surrounding country. Existing portions of the trail along its banks are favorites of pedestrians, joggers, bicyclists, and horseriders. Its stands of mature cottonwoods and other trees are also favored by birds and a growing beaver population. This plan recommends that trails should be continued along the canal as shown on the attached map.

The Highline Lateral, while not listed on the National Register, is eligible for listing. It splits off from the canal in the Green Valley Ranch area and flows northwest into the southern boundary of the Arsenal east of Montbello. While smaller in scale than the canal, it also has the potential to be an effective link from Aurora and Denver through the new neighborhoods west of Airport Boulevard and into the system of trails on and bordering the Arsenal. The crossing of the Highline Lateral and Airport Boulevard near 48th Avenue should be treated sensitively, with the intent to preserve the historical integrity of the lateral.

c. Airport Boulevard Corridor

The Airport Boulevard Corridor will contain the main access highway into the new airport terminal. The road will split off from I-70 at approximately Buckley Road and travel north in a 2,000 foot-wide open-space corridor along the Buckley alignment and the east edge of the Arsenal. At approximately 72nd Avenue it will turn east in a mile-wide open-space corridor into the new airport site. Both the 2000 foot north-south corridor and the one mile east-west corridor will be



kept as permanent open-space. An east-west trail should extend from Airport Boulevard into the terminal area to serve both bicycling commuters and cycling tourists, and discussions with the New Denver Airport Office should continue to determine if such a trail extension would be feasible.

North-south trails have been planned for the corridor to interconnect Sand Creek, First Creek, Second Creek, the Highline Canal, the Highline Lateral, and the E-470 trails. Those trails are illustrated on the attached map. Discussions with the Airport Boulevard and Corridor designers should continue in order to determine whether the primary north-south trail is best located on the east or west side of the Boulevard and to finalize the alignment of the trail in the vicinity of Buckley Road/Second Creek/Tower Road.

There is no easy connection from Sand Creek to the Airport Boulevard corridor trail. An on-street segment along Buckley Road will probably be required and should be accommodated in the improvements to the road made by Aurora. The details of the crossing of I-70 must still be settled between Aurora and Denver, and the final design should accommodate a trail connection across the interstate. The best alternative to the Buckley Road on-street segment would be to have a path follow the Highline Canal trail northwest from Sand Creek and then northwest along Irondale Gulch back to the Corridor.

#### d. Second Creek

This drainageway flows generally northwest from areas of Aurora south of the new airport, through portions of the new airport site, and on to the South Platte River. The West Fork of Second Creek originates near the Denver/Aurora boundary near 64th Avenue and flows generally northwest through the Gateway area and the east-west segment of the Airport Corridor to join the main branch of the creek west of the new airport site. Because of their strategic locations, the two branches of this creek will constitute the main open-space corridor connecting Aurora with the Platte River. While the banks of both branches have been cultivated, the channel bed has eroded in places, and much of the natural character has been destroyed, it is nevertheless important to maintain open-space corridors and trails along its banks in order to complete a contiguous open-space loop system. Aurora anticipates obtaining its portion of the right-of-way through floodplain dedications.

A Second Creek trail cannot cross the new airport site along the creek itself, due to intervening runways, roadways, parking lots, and airport equipment sites. In order to allow the trail to continue its route toward the Platte River trails, however, the New Denver Airport Office has agreed that the trail can turn west and occupy part of the east-west strip of land that Denver owns between its annexation boundary and acquisition boundary on the south edge of the airport west of Second Creek. Use of that strip would allow the trail to connect with the E-470 trail and other trails to the west. A final alignment of the trail through the east-west strip will have to be negotiated when more is known about the design of nearby airport facilities.

The Second Creek trail alignment should also be coordinated with plans for trails along E-470 so that they intersect. However, the size and complexity of the E-470/Airport Boulevard interchange will make it difficult for either trail to continue northward through that interchange. Therefore, once the two trails join, the combined trail should head west within the Airport Boulevard Corridor and pass north under the Boulevard in the vicinity of Tower Road. This alignment should be determined more specifically as detailed design of Airport Boulevard progresses.

Once north of the Boulevard, the two trails should diverge, with the E-470 trail returning east to the beltway and the Second Creek trail continuing northwest along the drainage. In the area north of the Airport Boulevard Corridor, the open-space corridor will have to be protected by Brighton and Commerce City. The attached map shows the proposed interaction between the Second Creek and E-470 trails and how those trails should continue to join with the Platte River trail system. The many highway crossings, railroad crossings, and bridge structures in this area will make it necessary to consolidate several trails along the numerous creeks and canals in the vicinity.

#### e. E-470 Corridor

E-470 is a proposed beltway circumscribing the eastern edge of the metro area from the intersection of I-25 and C-470 on the south to approximately I-25 and 120th Avenue on the north. The E-470 Authority intends to construct trails along this limited-access highway. The Authority has agreed in concept to moving the trail

away from interchanges where that would improve safety and/or the trail experience, but has indicated that further discussions on funding of such trail diversions will be necessary. Trails along the highway will also play an important role in the recreation system for the area.

North of the airport, the E-470 trails will be designed to accommodate horses, but appropriate ways to cross highways and railroads will have to be found. Similarly, development of the trails in the vicinity of the Airport Boulevard/Tower and Airport Boulevard/E-470 interchanges will require effort on the part of many jurisdictions. Exact alignments should be determined as detailed design occurs for the beltway and for Airport Boulevard.

#### f. Box Elder Creek

This major drainageway originates many miles to the south in the Black Forest area near Colorado Springs. From that starting point, it flows north to join the South Platte River near Greeley. As an open-space and trail corridor, it has regional importance as a significant migration path for antelope, deer, and other animals. In addition, it has the potential to link together communities on the east of the metro area in the future. The creek should remain in undeveloped open space, and could be obtained primarily through floodplain dedications. To control erosion, agricultural uses should be drawn back from the edges of the creek approximately 200 feet and the riparian vegetation and prairie grasses allowed to reestablish themselves. Improvements along the creek should be built in accordance with adopted drainage plans.

Along the eastern edge of the new airport site, there are two areas where the historic channel of the creek crosses the new airport site. Near the southeast corner of the site the trail crosses the proposed alignment of the easternmost north-south runway. Since that runway is not scheduled for construction for many years, there is ample opportunity to consider alternatives that would allow continued migration of the animals.

Near the northeast corner of the airport site, the creek crosses very near the clear zone at the east end of the northernmost east-west runway. That runway is likewise not scheduled for construction for many years, and continued negotiations with the New Denver Airport

Office will be necessary to determine whether it will be possible for the current trail alignment to coexist with required airport equipment and fencing in the area, or whether a relocation of the creek and trail will be necessary. Once that is determined, easements or other mechanisms may be required so that the trail can continue through Aurora and reconnect with the creek channel.

In both cases, it will be important to reach a trail design or relocation decision that continues to allow the animals to migrate along the corridor. Any changes that affect migration paths should be done in stages over time, so that new vegetation can be established and animals can gradually get used to a new route. The need to change the stream corridor migration route gradually may mean that the trail and the stream are not adjacent for some interim period, but the goal will be to bring them back together on a single relocated alignment. If relocation is necessary, the new trail alignment should proceed on the strip of land that Denver owns between its annexation boundary and its acquisition boundary wherever compatible with airport operations. The proposed trail location is shown on the attached map.

g. O'Brien Canal, Burlington Canal  
and Fulton Ditch

These three canals are historic waterways meandering from the South Platte River generally northeasterly through the northwest portion of the study area. The Adams County Parks Department has been obtaining easements for a trail that will connect the South Platte River and Barr Lake along the O'Brien Canal. The county and its cities will continue to cooperate to develop trails and open-space corridors along the other canals. This plan calls for the Second Creek trail to connect with those trails and open-space corridors.

**2. Detached Sidewalk (On-Street) Trails**

While off-street trails are preferable and afford the most enjoyable experiences, some segments of the trail system will need to be on-street in order to complete the trail and open-space system. In this plan, an on-street trail means a sidewalk enlarged sufficiently to accommodate local pedestrian and bike traffic. Specific off-street trail development standards are described beginning on Page 16. The proposed on-street segments are shown on the attached map.

### 3. Equestrian Trails

There is significant demand for equestrian trails in the metropolitan area, and particularly in Adams County. Many, but not all, of the open-space corridors described above should accommodate horses. Those corridors that should be designed to accommodate horses are shown on the attached map. As with the pedestrian system, the aim of this plan is to provide an interconnected loop system with logical beginning and ending points.

### 4. Trailheads

Trailheads should be located at the junction of two or more trails or important departure points along a major trail. Improvements at a trailhead should include picnic tables, shade or shelters, water, restroom facilities, and parking for cars, bikes, and horse trailers. By locating trailhead improvements in parks or open-space areas, or on high points, the facilities could also be shared with those using the park or enjoying the views. Important trailhead locations are shown on the attached map.

## IV. OPEN-SPACE AND TRAIL DEVELOPMENT STANDARDS

The character of different regional park amenities and athletic complexes should vary in order to reflect their unique setting and to provide users with a wide variety of experiences. This plan therefore does not address specific standards for such parks and athletic complexes. In contrast, the character of recreational trails and open-space corridors needs to be more uniform along their length. Many of the trails and open-space corridors proposed in this plan cross jurisdictional boundaries, and the jurisdictions involved need to agree upon basic construction standards in order to provide a consistent experience. In some cases, the wildlife and environmental benefits of careful design in one jurisdiction could be compromised unless similar standards are imposed by others. Uniform standards will also ensure that private developers whose land is involved are treated fairly by the different jurisdictions.

This plan recommends that the character of the stream corridors and drainageways mentioned above should generally be left as natural, undisturbed, and un-engineered as possible. Natural treatment not only provides a more attractive amenity for residents and workers who will inhabit the area, but is often cheaper than heavily engineered approach. In addition, natural treatment often helps preserve water quality and wildlife health along the length of a drainageway. Generally, a 150 foot width of open-space is considered the absolute minimum along a drainageway, with a much wider swath required in some places to preserve vegetation and the 100 year floodplain. Trails should be kept away from riparian habitat and vegetation to minimize disturbances to these fragile ecosystems, dipping closer to the water at various points to add variety.

Because conditions change along a drainageway and differ among creeks, specific design details should be determined individually for each drainage basin within the context of master drainage studies conducted by the Urban Drainage and Flood Control District. Those studies should help establish various floodplain widths following planned flood prevention improvements. Much of the floodplain land should be obtained through the floodplain dedication ordinances of the participating jurisdictions.

While some of the on-street and off-street pedestrian and bicycle trails may be used by commuters as well as recreational users, this plan has focused on those trails which are an integral part of the recreational park and open space system. Additional work will need to be done by each jurisdiction on the design of commuter-oriented bicycle trails, the integration of those trails with street design, and the coordination of those trails and pathways designs and standards with adjacent jurisdictions.

More specific trail and open-space standards are set forth below.

A. Pedestrian and Bicycle Off-Street Trails

**Width:**

Desirable: 12' paving with a 5' shoulder either side

**Minimum**

Acceptable: 10' paving with a 2' shoulder of material either side

**Materials:**

Desirable: Concrete if heavy bicycle use is anticipated

Acceptable: Road quality asphalt



Shoulder  
Materials:  
Desirable: Granite fines or crushed sandstone  
Acceptable: A mown swath

B. Detached Sidewalk (On-Street) Trails

Width:  
Desirable: 12' desirable if high volume pedestrian movement is projected; on a detached sidewalk, not striped along the street;

Minimum  
Acceptable: 10'

Materials: Concrete

Note: These standards apply to trails designed and located primarily for recreational use. Additional work will be done by each jurisdiction to design and integrate bicycle trails and pathways for commuter uses

C. Equestrian Trails

Width: 5' minimum tread

Separation: Equestrian trails will often be adjacent to a pedestrian/bicycle trail, and should be separated from such trails by a shoulder a least 5' wide, and wider if possible

Materials:  
Desirable: Granite fines or crushed sandstone  
Acceptable: A mown swath;  
Asphalt should never be used

D. Underpasses

Construction: Bridges are preferable to box culverts because they are less intimidating to wildlife and are more aesthetically pleasing. Because of the cost, bridges are recommended for major drainageway/trail/highway crossings such as Airport Boulevard and First and Second Creeks. Box culverts are the only alternatives to bridges that should be considered.

Height: 15' clearance for equestrian trails under all highways and regional arterials (e.g. E-470, Airport Boulevard, 56th Avenue, Tower Road).  
12' clearance for equestrian trails under all other streets.  
12' clearance for pedestrian/bicycle trails under all streets.

## V. DEDICATION REQUIREMENTS

A level of consistency among jurisdictions in their park land dedication and development fee requirements is desirable for two reasons -- to ensure that sufficient park amenities are provided in all jurisdictions and to ensure that private developers are treated equitably by all jurisdictions. On the other hand, it is important for each jurisdiction to determine its actual cost of providing the level of park amenities that its residents are willing to support, and then tie its land dedication and development fees to those costs. Since each jurisdiction must comply with its own interpretation of legal requirements regarding dedications and fees, it is likely that there will be some variation among jurisdictions in such requirements.

Table 1 summarizes some current and proposed land dedication and fee requirements used in the airport environs area. All the local governments acknowledge that the current requirements are not sufficient to provide the regional amenities discussed in this plan, and that new exaction/ financing mechanisms will be needed to implement the plan.

To produce the park and open-space system described above, all jurisdictions should consider adopting ordinances that restrict urban development in the 100-year floodplain and reserve the floodplain as open-space. Both residential and nonresidential development should be required to contribute to the acquisition and development of park and open-space amenities, as they already are in many Front Range jurisdictions. Since new residents and workers in the airport environs area will use the entire network of parks and open-spaces in the area, developers in all jurisdictions should collectively bear the acquiring and developing those items. In particular, they should bear the full cost of acquiring (or dedicating) and developing new community parks needed to serve their individual developments, should contribute to other off-site parks and open-spaces required by their jurisdiction, and should contribute to regional parks and open-space serving multiple jurisdictions.

## VI. THE ACTION PLAN

The plan outlined in this document is a significant first step on the road towards a full-fledged park, open space, and trail system for the airport environs. It identifies the promise and potential of the natural and historic resources to be stitched together into a first-rate system. But it is only a first step. These recommendations must be taken under advisement by officials in each jurisdiction--park and open space advisory boards, planning boards/commissions, and elected officials. Citizens and landowners need to offer their insights and perspectives. It is not too early to begin this next part of the process by scheduling work sessions and public hearings.

Work must also continue with other agencies--local, state, and federal. Significant elements of the system depend on cooperation by the New Denver Airport Office, particularly trail links across airport property (notably Airport Boulevard). Future connections into the Rocky Mountain Arsenal need to be explored with the U.S. Army so that options are maintained while the land is being cleaned up. Discussions must continue with state wildlife and other agencies that have important roles to play in implementing this plan. And of course, the seeds of cooperation planted by Adams County, Aurora, Brighton, Commerce City, and Denver that have now sprouted must be nurtured--there are still many interjurisdictional issues that must be sorted out in greater detail. For example, the plan recommends that Denver and Aurora explore joint funding and maintenance of several facilities. There is some precedence for this in the metropolitan area, but it will be no easy task to accomplish on the scale suggested here.

Funding, maintenance, and management plans must also be crafted to draw on a variety of sources and techniques--land dedications, impact fees, special districts, private expertise and contributions, and federal and state assistance where available.

The participating jurisdictions should capitalize on the momentum and excitement that will grow as construction of the new airport begins this fall. The action plan set out below provides a blueprint for the steps that should be taken now to keep the ball rolling.

Specific actions to implement this plan are set forth below.

#### A. Plan Adoption

These recommendations should be reviewed in an open public process and adopted by the respective park and/or open-space advisory boards, planning boards/commissions, and elected officials. While the New Denver Airport Office has agreed to the general concepts of the plan, dialogue between the jurisdictions and that Office must continue to resolve issues at the detailed design stage and to ensure that the intent expressed in the concepts is incorporated throughout the design process.

- A1. Present the draft recommendations to ATAC and revise in light of their comments.

Responsibility: All participants  
Timing: Fall 1989

- A2. Present the draft recommendations to all affected departments, respective Planning Commissions and elected officials in all affected jurisdictions for their initial review. Revise in light of their responses.

Responsibility: All participants  
Timing: Fall 1989

#### B. Regional Amenities

##### Overall

- B1. Continue interjurisdictional discussions to develop mechanisms to acquire/finance the acquisition of large park and open-space parcels (regional district) in the area and to encourage developer contributions of parcels that would add to the park or open-space amenities.

Responsibility: All jurisdictions  
Timing: Immediately

## Specific Amenities

### Rocky Mountain Arsenal

- B2. Continue discussions with the Army to ensure that clean-up and disposal plans protect public health and enhance the wildlife habitat in the southeast portion of the Arsenal and along the First Creek corridor. Encourage clean-up planning that is consistent with future trails and regional park amenities on the Arsenal.

Responsibility: All jurisdictions  
Timing: Continuing

- B3. Pursue relationships with other interested parties such as Colorado Open Lands, Urban Design Forum, state and federal wildlife agencies and interest groups, and federal and state legislators to encourage designation of the site as an open-space and wildlife area after a full and thorough clean-up.

Responsibility: All jurisdictions  
Timing: Begin immediately

### Barr Lake

- B4. Investigate and adopt zoning and other land use regulatory techniques that will keep the buffer area in agricultural or open-space uses in accordance with the Master Plan that is to be completed by the end of summer.

Responsibility: Adams County, Brighton  
Timing: Adoption by the end of 1989

- B5. Continue discussions with the E-470 Authority and EPA on the location and character of the 404 wetlands mitigation.

Responsibility: Adams County Parks, E-470  
Authority  
Timing: Continuing

B6. Begin discussions with state parks personnel and state legislators to move the acquisition of Barr Lake buffer land to a higher priority.

Responsibility: All jurisdictions  
Timing: Begin immediately

B7. Investigate other techniques to acquire and protect the buffer, such as the use of a land trust, impact fees, Adams County cash-in-lieu payments for regional parks, annexation, and intergovernmental agreements.

Responsibility: Adams County  
Timing: Begin after the above strategies have been pursued.

#### Piccadilly Road and 64th Avenue

B8. Negotiate a joint use agreement between the Denver Water Department and Aurora to address development and maintenance responsibilities.

Responsibility: Denver Water Department, Aurora  
Timing: Begin immediately.

#### Box Elder Creek

B9. Take necessary steps to ensure that a large, natural open space along Box Elder Creek between 56th Avenue and the airport is available for a regional open space amenity at the confluence of the east and west branches of Box Elder Creek.

Responsibility: Aurora  
Timing: Continuing

#### Adams County Prairie Parcel

Strategies to assist Adams County in its efforts to obtain a designated prairie park parcel should be developed at the time Adams County seeks assistance from other jurisdictions.



### First Creek Park and Open-Space Complex

- B10. Continue discussions exploring the possibility of contributions by Aurora to expand and maintain the First Creek community park and/or nature area within Denver commensurate with use by citizens of Aurora.

Responsibility: Denver Office of Airport Gateway  
Development, Denver Parks  
Department, Denver Waste Water  
Management, Aurora Parks  
Department  
Timing: Continuing

### C. Athletic Complexes

- C1. Begin discussions to further refine demand, to identify potential sites and financing techniques and to develop acquisition, operating, and maintenance agreements for a regional athletic complex north of the airport.

Responsibility: Adams County, Brighton, Commerce  
City  
Timing: Begin immediately

- C2. Continue discussions to refine demand for a regional athletic complex south of the airport, to evaluate potential sites in the vicinity of Monaghan Road and 38th Avenue, and to develop acquisition, operating, and maintenance agreements.

Responsibility: Aurora, Denver  
Timing: Continuing

### D. Open-Space Corridors and Trails

#### Overall

- D1. To maintain the natural appearance of streams and to continue to have input into the detailed design of drainageways occurring through regional drainage studies overseen by the Urban Drainage and Flood Control District.

Responsibility: All jurisdictions, Urban  
Drainage and Flood Control  
District  
Timing: Continuing

## Specific Amenities

### First Creek

- D2. Continue discussions with Airport Boulevard designers on the interchange at 56th Avenue and Airport Boulevard to ensure the integrity of the creek is maintained and that the trail crossing will allow animal movements and is aesthetically pleasing.

Responsibility: Denver  
Timing: Continuing

### Airport Boulevard

- D3. Continue discussions with Airport Boulevard designers and wildlife officials to determine the alignment of the trail segment in Denver and the connections at 56th Avenue, Second Creek, the Highline Lateral, and the Aurora segment of the trail.

Responsibility: Denver, Aurora  
Timing: Continuing

- D4. Determine the alignment of the trail segment in Aurora along Buckley Road, the crossing at I-70, and the connection to the trail in the Denver portion of the corridor, and reserve the right-of-way.

Responsibility: Aurora, Denver  
Timing: Continuing

### Second Creek

- D5. Continue discussions with the airport designers to determine the location of the trail on Denver-owned land between Second Creek and E-470 and appropriate connections to the south.

Responsibility: Denver, Aurora  
Timing: Continuing

- D6. Continue to evaluate alternative alignments for the Second Creek trail within the Airport Boulevard corridor in the vicinity of Tower Road.

Responsibility: Denver, Aurora  
Timing: Continuing

#### E-470

- D7. Continue discussions with the designers of E-470 and the Airport Boulevard corridor to determine the location of the trail in the vicinity of the E-470/ Airport Boulevard interchange. Further evaluate the alternative of moving the trail west from E-470 at approximately 72nd Avenue, to connect to the West Branch of Second Creek.

Responsibility: Aurora, Denver  
Timing: Continuing

- D8. Work with the designers of E-470 and appropriate highway agencies and railroad companies to determine the alignment of the E-470 trail between the O'Brien Canal and the South Platte River.

Responsibility: Adams County Parks, Brighton  
Timing: Begin immediately

#### Box Elder Creek

- D9. Resolve questions about the annexation of unincorporated land between Aurora and the Denver-owned land and airport site at the northeast corner of the airport.

Responsibility: Aurora, Denver  
Timing: Continuing

- D10. Designate the Box Elder Creek corridor as open-space on all affected comprehensive plans.

Responsibility: All jurisdictions  
Timing: Continuing

- D11. Continue discussions with the designers of the airport on the possible need to relocate the creek eastward to avoid interference with navigational equipment and clear zone requirements. Work with wildlife experts to address concerns about wildlife migration. Obtain agreement from the New Denver Airport Office regarding the alignment of the trail on Denver-owned land outside the actual airport boundary.

Responsibility: Denver, Aurora  
Timing: Continuing

D12. Develop agreements with land owners to allow the trail to cross private land near the northeastern edge of the airport to permit the trail and relocated drainage to reconnect with the current Box Elder drainage.

Responsibility: Aurora  
Timing: At the time of annexation or development approvals in the area

E. Dedication Requirements and Impact Fees

E1. Review floodplain dedication and zoning ordinances in all jurisdictions to ensure the reservation and/or dedication of the 100-year floodplain as open space where appropriate and where compatible with adopted regional drainage plans.

Responsibility: Denver, Adams County, Commerce City, Brighton  
Timing: Begin Summer 1989

E2. Adopt park land dedication or cash-in-lieu requirements for nonresidential development.

Responsibility: Denver, Brighton  
Timing: Begin Summer 1989

E3. Review park development fees or requirements for developer contributions for the acquisition and construction of parks and open spaces to ensure that all parks and trails necessitated by development are adequately addressed.

Responsibility: All jurisdictions  
Timing: Begin Summer 1989

E4. Adopt drainage basin impact fees or other financing mechanisms.

Responsibility: All jurisdictions  
Timing: 1989

TABLE 1

PARK HIERARCHY, DEDICATION AND DEVELOPMENT FEE REQUIREMENTS  
FOR PARTICIPATING JURISDICTIONS

<u>Jurisdiction</u>	<u>Hierarchy &amp; Standards</u>	<u>Dedications</u>	<u>Development Fees</u>
-----			
ADAMS COUNTY	Vestpockets/ Playlots 2,500 sq.ft. to 1 acre		
	Neighborhood Parks 2-10 acres	Neighborhood Parks 6 acres/1000	Developer required to construct neighborhood parks
	Community Parks 50-400 acres		
	District Parks 10-30 acres		
	Regional Parks 250 + acres	Regional Parks 4.8 acres/1000	
-----			
AURORA	Vestpockets 0-2 acres	6% of land for residential development	\$300 per dwelling unit
	Neighborhood Parks 2-8 acres	2% of land for non- residential development	
	Community Parks 20 + acres		
	District Parks 8-20 acres		
	Playfield 20 + acres		
	Regional-- Depends on Use		

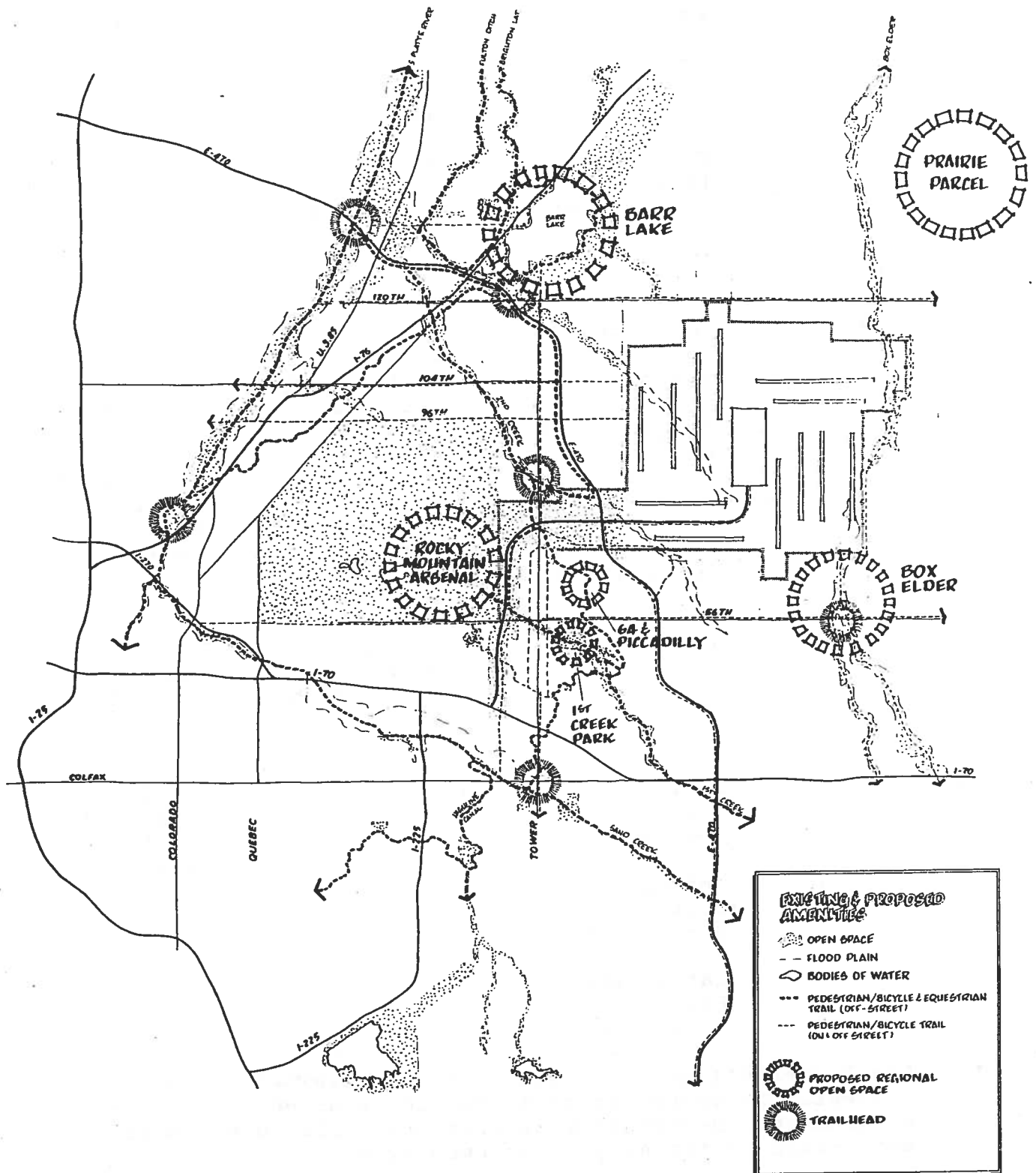
<u>Jurisdiction</u>	<u>Hierarchy &amp; Standards</u>	<u>Dedications</u>	<u>Development Fees</u>
BRIGHTON	Neighborhood Parks 10-12 acres	Neighborhood Parks 3 acres/1000 or cash in lieu	\$250 per dwelling unit
	Community Parks 50-60 acres	Community Parks 3 acres/1000 or cash in lieu	
COMMERCE CITY	Vestpocket up to 2 acres	1.5% of land for large lot R-1 zone or cash in lieu	1.5 cents/ sq.ft. in lieu of dedication
	Neighborhood Parks 2-10 acres	3.0% of land for multi- family zone or cash in lieu	3.0 cents/ sq.ft. in lieu of dedication
	Community Parks 10-30 acres	3% of land for non- residential zone or cash in lieu	.5 cent/ sq.ft. in lieu of dedication
DENVER *	Neighborhood Parks 0-10 acres	6% of land area	Developer constructs neighborhood parks
	Community Parks 5-80 acres		
	Large Urban Parks 80 + acres		

\* The Denver Office of Airport Gateway Development is currently recommending revisions to required dedications and development fees for parks, open space and trails in the Airport Gateway area.



# THE EMERALD STRANDS PLAN

## AN INTERJURISDICTIONAL PARK, OPEN SPACE & TRAIL PLAN



# Rocky Mountain News

SATURDAY

March 10, 1990.

## Trails, open space planned near airport

By Tillie Fong

Rocky Mountain News Staff Writer

An intricate lacework of trails and open space is planned around the new international airport, Denver and Adams County officials announced yesterday.

"It's called Emerald Strands, and they're real gems," said Chris Duerkson, who is planning land use around the new airport.

The 200-mile trail system would connect five proposed regional parks, Barr Lake, Box Elder, part of the Rocky Mountain Arsenal, First Creek Park and Mountain View Park.

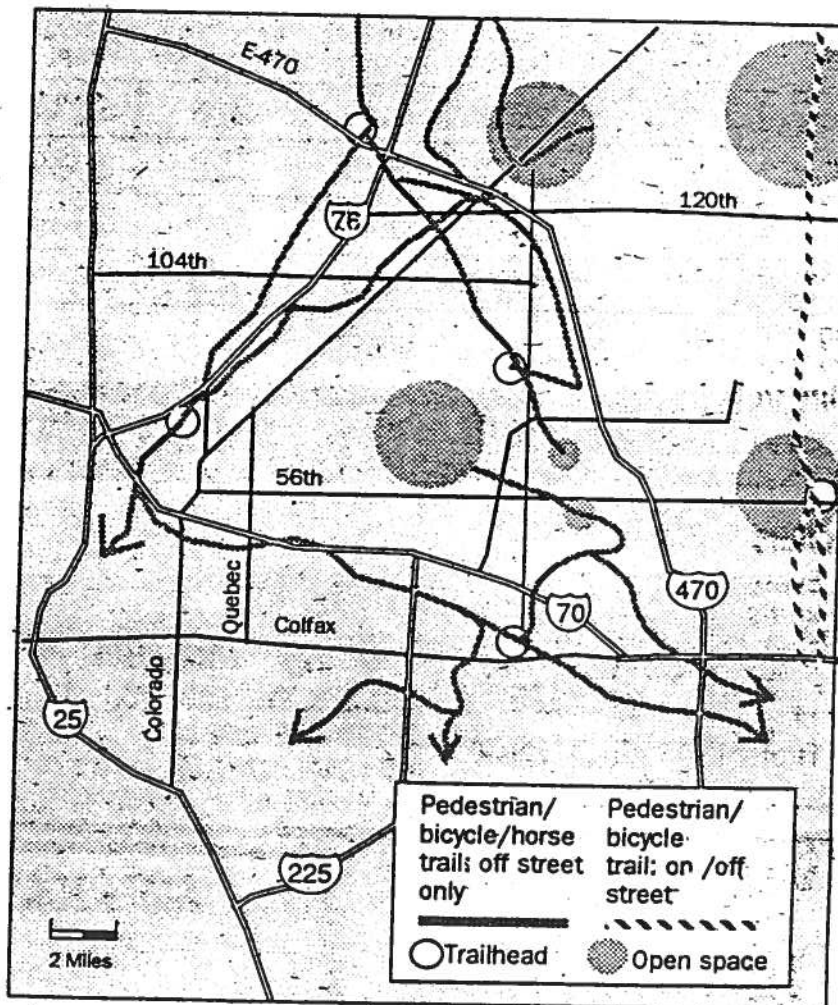
The plan provides for 1,500 acres of open space, 60 miles of on-street bike trails, 150 miles of off-street bike-hiking trails and 96 miles of equestrian paths.

Officials wouldn't speculate yesterday about how much the project would cost, or where specifically the money would come from.

But they hope the 20- to 50-year project will be paid for with money from the state lottery, the state's trail funds, developer fees and private sources, said Nicki Stoner, director of long-range planning for Adams County.

A separate funding organization, such as the one created to oversee the development of the South Platte River greenway, also is being considered.

Only 10% of the trail system has been completed, and certain open-space areas, such as the 640 acres for the Prairie Parcel in Adams County, have yet to be obtained



for the plan.

Officials said the trail system would require developers to dedicate land and improve drainage systems.

They also see the trail system as an incentive for development in

the area as well as an opportunity to preserve the environment.

"We are building more than an airport," said Denver Mayor Federico Peña.

"We want to do something that will make this a very special area."



**DRCOG 2020-2023  
TRANSPORTATION IMPROVEMENT PROGRAM**

**Adams County Subregional Share Project**

**Aurora High Line Canal Trail –  
East Colfax Avenue to Interstate 70**

**Letters of Concurrence**

February 8, 2019

Cindy Colip  
Acting Deputy Director - Public Works  
15151 E Alameda Pkwy  
Aurora, CO 80012

RE: CDOT Region 1 Support Request for DRCOG TIP Subregional Call FY20-FY23

Dear Ms. Colip,

This letter is to inform you that the Colorado Department of Transportation (CDOT) Region 1 concurs with the following Aurora application for the DRCOG Subregional FY20-23 TIP Call. This concurrence applies only for the High Line Canal South Trail Improvements project, in the event this project is selected by the Forum and DRCOG as a Subregional project in April/May 2019. If this Subregional project is awarded DRCOG funds at a later date, the local agency will need to reaffirm CDOT's concurrence at that time.

This concurrence is conditionally granted based on the scope as described. CDOT does however retain final decision-making authority for all improvements and changes within CDOT's right of way. As the project progresses the local agency will need to work closely with CDOT Region staff to ensure CDOT's continued concurrence.

Regardless of funding source, if a local agency uses Federal and/or State funds in the design of a project, they must complete construction of the project within the contract term stated in the IGA, or reimburse CDOT/FHWA for the expended funds. Any cost overruns that exceed federal and state amounts listed on Exhibit C of the IGA will be the responsibility of the Local Agency.

This project must comply with all CDOT and/or FHWA requirements including those associated with clearance for Right of Way, Utilities, and Environmental. All costs associated with clearances including right of way acquisition, utilities relocation, and environmental mitigation measures, such as wetland creation, must be included in the project costs. CDOT staff will assist you in determining which clearances are required for your project. The CDOT Local Agency Manual includes project requirements to assist with contracting, design, and construction, which can be accessed at:

[http://www.coloradodot.info/business/designsupport/bulletins\\_manuals](http://www.coloradodot.info/business/designsupport/bulletins_manuals)

Should you have any questions regarding this concurrence or if your agency would like to schedule time to meet with CDOT specialty units, please contact JoAnn Mattson at (303) 757-9866.

Sincerely,



Paul Jesaitis  
CDOT Region 1 Transportation Director

**To:** Liu, Huiliang <[Hliu@auroragov.org](mailto:Hliu@auroragov.org)>

**Cc:** Todd Cottrell <[Tcottrell@drcog.org](mailto:Tcottrell@drcog.org)>; Worker-Braddock, Tom <[tworker@auroragov.org](mailto:tworker@auroragov.org)>; Callison, Mac <[Mcalliso@auroragov.org](mailto:Mcalliso@auroragov.org)>; Colip, Cindy <[ccolip@auroragov.org](mailto:ccolip@auroragov.org)>; Van Meter, Bill <[Bill.VanMeter@RTD-Denver.com](mailto:Bill.VanMeter@RTD-Denver.com)>; Sirois, William <[William.Sirois@RTD-Denver.com](mailto:William.Sirois@RTD-Denver.com)>

**Subject:** RE: City of Aurora 2020-2023 DRCOG TIP Project Application RTD Concurrent Letter Requests

Hi Huiliang,

This email is to provide RTD concurrence for the City of Aurora's TIP application requests. As design progresses, we will want to review plans for those projects that directly impact RTD properties and facilities.

Please contact me if you would like additional information.

Chris

Chris Quinn  
Project Manager  
Regional Transportation District  
Suite 700  
1560 Broadway  
Denver, CO 80202  
(303) 299-2439  
[chris.quinn@rtd-denver.com](mailto:chris.quinn@rtd-denver.com)

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**From:** Liu, Huiliang <[Hliu@auroragov.org](mailto:Hliu@auroragov.org)>

**Sent:** Monday, January 07, 2019 4:49 PM

**To:** Quinn, Chris <[Chris.Quinn@RTD-Denver.com](mailto:Chris.Quinn@RTD-Denver.com)>

**Cc:** Todd Cottrell <[Tcottrell@drcog.org](mailto:Tcottrell@drcog.org)>; Worker-Braddock, Tom <[tworker@auroragov.org](mailto:tworker@auroragov.org)>; Callison, Mac <[Mcalliso@auroragov.org](mailto:Mcalliso@auroragov.org)>; Colip, Cindy <[ccolip@auroragov.org](mailto:ccolip@auroragov.org)>

**Subject:** City of Aurora 2020-2023 DRCOG TIP Project Application RTD Concurrent Letter Requests

Hi Chris,

Please see the attached for City of Aurora's requests for RTD's concurrent on Aurora TIP application projects. Your confirmation of receiving this email is requested and will be greatly appreciated.

Huiliang

-----  
*Huiliang Liu*

Principal Transportation Planner  
Planning and Development Services  
City of Aurora  
15151 E. Alameda Parkway  
Aurora, CO 80012



**DRCOG 2020-2023  
TRANSPORTATION IMPROVEMENT PROGRAM**

**Adams County Subregional Share Project**

**Aurora High Line Canal Trail –  
East Colfax Avenue to Interstate 70**

**Letters of Support**



ADCOG Subregional Forum – Lynn Baca, Chair  
C/O Kristin Sullivan, AICP  
Director, Community & Economic Development  
Interim Director, Public Works  
4430 South Adams County Parkway, 1<sup>st</sup> Floor, Suite W2000A  
Brighton, CO 80601-8204

February 20, 2019

Re: Aurora High Line Canal Trail Project– East Colfax Avenue to Interstate 70

Dear Adams Subregional Forum TIP Evaluation Committee:

As a funding partner, Adams County Parks and Open Space is writing in order to show support for the City of Aurora's TIP Grant application for final design and construction of the High Line Canal Trail from Colfax Avenue to Interstate 70.

Trail connectivity and development is an issue that is very important to the Adams County Board of County Commissioners and supports our Department's continued goal of improving trail connections for the residents of Adams County. This trail connection will provide access to healthy activity for Adams County residents living in this area and will provide a much-needed connection between communities to the north and south of I-70. It will also provide a safe connection to the 71 mile High Line Canal regional trail corridor.

We ask that you provide full consideration and support for this important project.

Sincerely,

J. Byron Fanning  
Director, Adams County Parks and Open Space  
9755 Henderson Rd.  
Brighton, CO 80601



ADCOG Subregional Forum – Lynn Baca, Chair  
C/O Kristin Sullivan, AICP  
Director, Community & Economic Development  
Interim Director, Public Works  
4430 South Adams County Parkway, 1<sup>st</sup> Floor Suite W2000A  
Brighton, CO 80601-8204

February 14, 2019

Re: Grant Request for Aurora High Line Canal Trail Project – East Colfax to Interstate 70

Dear Adams Subregional Forum TIP Evaluation Committee:

I am writing to express support for the Aurora Parks, Recreation and Open Space Department's 2019 grant proposal for the High Line Canal tra

Bicycle Aurora is a group of concerned volunteer citizens and businesses interested in improving the quality of bicycle trails and routes throughout Aurora. We advocate for, and strongly support, expansion of the trail network in Aurora and destinations beyond to better serve the bicycling community as well as other trail uses. Our organization is eager for the city to advance its vision for the High Line Canal Trail beyond the 60% design stage by moving forward with final design, construction of this most costly and difficult missing link of trail.

The High Line Canal Trail is an important regional trail for the city and metro Denver because the corridor weaves through the metro area, interconnects eleven jurisdictions and is adjacent to 73 different green spaces along its route. Unfortunately, the concrete paved trail in Aurora ends short of the total distance of the trail's namesake, the historic irrigation canal that it parallels. However, the city seeks to extend the trail farther north beyond its current terminus at Colfax Avenue, which will add 1.8 miles of new trail with this project that will include a safe trail underpass at I-70.

Again, Bicycle Aurora endorses Aurora's grant application. We respectfully ask that the Adams County Subregional Forum TIP Evaluation Committee favorably consider awarding a grant for the Aurora High Line Canal Trail Project from East Colfax to Interstate 70.

Sincerely,

A handwritten signature in black ink that reads "Tom Tobiasen".

Tom Tobiasen  
Bicycle Aurora



February 15, 2019

ADCOG Sub regional Forum – Lynn Baca, Chair  
C/O Kristin Sullivan, AICP  
Director, Community & Economic Development  
Interim Director, Public Works  
4430 South Adams County Parkway, 1<sup>st</sup> Floor, Suite W2000A  
Brighton, CO 80601-8204

Re: Aurora High Line Canal Trail Project– East Colfax Avenue to Interstate 70

Dear Committee Members:

Denver Water fully supports the City of Aurora's TIP Grant application for final design and construction of the High Line Canal Trail from Colfax Avenue to Interstate 70.

Denver Water has been actively working with its partner agencies to address gaps and needed improvements along the Canal. This is one of the last and largest gaps in trail connectivity. Completion of this very important section would be a significant benefit to the Front Range community. The ability for trail users to cross I-70 safely would be a vast improvement to the current situation that requires travelling alongside Tower Road.

Denver Water encourages full consideration of this very meaningful project.

Sincerely,



Brandon Ransom  
Manager of Recreation



## SAND CREEK REGIONAL GREENWAY

Wilderness In the City

7350 E. 29<sup>th</sup> Avenue  
Suite 300  
Denver, CO 80238  
303-468-3263  
[www.sandcreekgreenway.org](http://www.sandcreekgreenway.org)

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Commerce City City  
Council  
Robbin Mitchell  
Community Volunteer  
Kerry O'Connell  
Mortenson  
Rob Price  
Denver Botanic Gardens  
Rich Reading  
Butterfly Pavilion  
Jim Spaanstra  
Faegre Baker Daniels LLP  
Jim Thomas  
Minor & Brown PC

### Executive Director

Beth Nobles

February 21, 2019

ADCOG Subregional Forum – Lynn Baca, Chair  
C/O Kristin Sullivan, AICP  
Director, Community & Economic Development  
Interim Director, Public Works  
4430 South Adams County Parkway, 1st Floor Suite W2000A  
Brighton, CO 80601-8204

Re: Grant Request for Aurora High Line Canal Trail Project – East Colfax to Interstate 70

Dear Adams Subregional Forum TIP Evaluation Committee:

I am writing to express support for the Aurora Parks, Recreation and Open Space Department's 2019 grant proposal for the High Line Canal trail.

The Sand Creek Regional Greenway is a 14 mile public greenway that connects the High Line Canal Trail in Aurora, with the South Platte River Greenway in Commerce City. We see the completion of the High Line Canal - East Colfax to Interstate 70 as providing additional opportunities for regional residents and visitors to benefit from the metro areas extensive trail network. Our organization is eager for the city to advance its vision for the High Line Canal Trail beyond the 60% design stage by moving forward with final design, construction of this most costly and difficult missing link of trail.

The High Line Canal Trail is an important regional trail for the city and metro Denver because the corridor weaves through the metro area, interconnects eleven jurisdictions and is adjacent to 73 different green spaces along its route. Unfortunately, the concrete paved trail in Aurora ends short of the total distance of the trail's namesake, the historic irrigation canal that it parallels. However, the city seeks to extend the trail farther north beyond its current terminus at Colfax Avenue, which will add 1.8 miles of new trail with this project that will include a safe trail underpass at I-70.

Again, the Sand Creek Regional Greenway endorses Aurora's grant application. We respectfully ask that the Adams County Subregional Forum TIP Evaluation Committee favorably consider awarding a grant for the Aurora High Line Canal Trail Project from East Colfax to Interstate 70.

Sincerely,

Beth Nobles  
Executive Director



**HIGH LINE CANAL**  
CONSERVANCY

February 1, 2019

ADCOG Subregional Forum – Lynn Baca, Chair  
C/O Kristin Sullivan, AICP  
Director, Community & Economic Development  
Interim Director, Public Works  
4430 South Adams County Parkway, 1<sup>st</sup> Floor, Suite W2000A  
Brighton, CO 80601-8204

Re: Aurora High Line Canal Trail Project– East Colfax Avenue to Interstate 70

Dear Adams Subregional Forum TIP Evaluation Committee:

I am writing to show the support of the High Line Canal Conservancy for the City of Aurora's TIP Grant application for final design and construction of the High Line Canal trail between Colfax Avenue and the I-70 underpass.

The High Line Canal is one of the longest continuous urban trails in the country, twisting through the most populated area of Colorado while crossing a diverse mosaic of communities and nature. The Canal originates in Waterton Canyon in Douglas County and runs into the northernmost reaches of Aurora near DIA. Falling within one mile of this 71-mile corridor are more than 350,000 residents.

The High Line Canal Conservancy was formed to harness community leadership and commitment to preserve, protect and enhance all 71 miles of the Canal. Over the last year, our organization, along with Denver Water and all stakeholders along the Canal, have embarked upon a community-driven planning effort to shape a vision and framework for the Canal's future. Together with thousands of community members, we have developed the Community Vision Plan for the High Line Canal.

Aurora's proposed project to construct the trail extension from Colfax Avenue to Interstate 70, including a new underpass at I-70 is in keeping with the public's priorities for the Canal. Connecting this gap in the Canal trail will implement an important component of the soon to be published High Line Canal Framework Plan.

This project will make a significant contribution towards our goal to maximize visitor comfort, awareness, and safety along a continuous and connected 71-mile signature regional greenway. Please consider this worthwhile project for funding and moving forward the efforts to connect people, nature and communities from the foothills to the plains.

Sincerely,

Harriet Crittenden LaMair  
Executive Director

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915 South Pearl, Suite 106

Denver, Colorado 80209

720.217.2056

[highlinecanal.org](http://highlinecanal.org)



**DRCOG 2020-2023  
TRANSPORTATION IMPROVEMENT PROGRAM**

**Adams County Subregional Share Project**

**Aurora High Line Canal Trail –  
East Colfax Avenue to Interstate 70**

**Cost Estimates**



High Line Trail South Section Improvements 60% Plans Cost Projection					
February 8, 2019					
NOTES REGARDING COST PROJECTION					
	This projection of costs is based on the 60% planning drawings. This projection is intended for preliminary budgeting only, and it is likely that costs will change, perhaps significantly as construction plans are developed. During the design process the governing agencies may impose requirements that impact these projections.				
	Most unit costs are based on bids received for similar projects in the Denver Metropolitan area. Some unit costs were obtained from contractors operating in the local area, and may vary.				
	Dry utility relocations were based off presumptions taken from an existing utility map.				
	Costs associated with any night work have not been included.				
	Reimbursable costs are not subtracted from the total costs, for any of the sections.				
	The probable costs below includes only those items listed, and any items not specifically listed below should be accounted for by the user.				
EROSION CONTROL	QTY	UNITS	UNIT PRICE	TOTAL COST	COMMENTS
EROSION CONTROL SUPERVISOR	160	HR	\$ 75.00	\$ 12,000.00	
STABILIZED STAGING AREA	1000	SY	\$ 18.50	\$ 18,500.00	
CURB SOCK	14	EA	\$ 52.00	\$ 728.00	
INLET PROTECTION	3	EA	\$ 325.00	\$ 975.00	
CONCRETE WASHOUT AREA	3	EA	\$ 1,855.00	\$ 5,565.00	
VEHICLE TRACKING PAD	9	EA	\$ 1,425.00	\$ 12,825.00	
STREET SWEEPING	2	MILES	\$ 2,300.00	\$ 4,600.00	
GRADIENT DIFFERENTIAL	7230	LF	\$ 1.25	\$ 9,037.50	
STRAW WADDLE	7230	LF	\$ 5.10	\$ 36,873.00	
SUBTOTAL - EROSION CONTROL				\$ 101,103.50	
DEMOLITION AND REMOVALS	QTY	UNITS	UNIT PRICE	TOTAL COST	COMMENTS
ASPHALT REMOVAL	57	SY	\$ 60.00	\$ 3,420.00	
CONCRETE REMOVAL	1225	SY	\$ 54.00	\$ 66,150.00	
CURB AND GUTTER REMOVAL	390	LF	\$ 9.18	\$ 3,580.20	
CLEAR AND GRUB	19457	SY	\$ 2.50	\$ 48,642.50	
STRUCTURE DEMOLITION	1	LS	\$ 2,500.00	\$ 2,500.00	Headwall Demo north of 28th
HIMALAYA STRUCTURE DECK AND ABUTMENT DEMOLITION	1	LS	\$ 25,000.00	\$ 25,000.00	
REMOVE 18" DIP STORM PIPE	60	LF	\$ 45.00	\$ 2,700.00	
SUBTOTAL - DEMOLITION AND REMOVAL CHARGES				\$ 151,992.70	
I-70 CROSSING	QTY	UNITS	UNIT PRICE	TOTAL COST	COMMENTS
GROUND NAIL WALL	1450	SF	\$ 165.00	\$ 239,250.00	
RETAINING WALL	624	CY	\$ 975.00	\$ 608,400.00	
HIGHLINE CANAL BOTTOM SECTION	47	CY	\$ 850.00	\$ 39,950.00	
UNDERPASS STRUCTURE	167	CY	\$ 1,125.00	\$ 187,875.00	
UNDERPASS EXCAVATION	602	CY	\$ 96.00	\$ 57,792.00	
UNDERPASS LIGHTING AND DRAINAGE IMPROVEMENTS	1	LS	\$ 215,000.00	\$ 215,000.00	
SUBTOTAL - I-70 CROSSING				\$ 1,348,267.00	
STORM IMPROVEMENTS	QTY	UNITS	UNIT PRICE	TOTAL COST	COMMENTS
BOX CULVERT	15	LF	\$ 775.00	\$ 11,625.00	
BOX CULVERT HEADWALL	2	EA	\$ 8,700.00	\$ 17,400.00	
REBUILD HEADWALL	1	EA	\$ 7,500.00	\$ 7,500.00	Headwall north of 28th along Tower Road
18" FLARED END SECTION	2	EA	\$ 1,750.00	\$ 3,500.00	
SUBTOTAL - STORM IMPROVEMENTS				\$ 40,025.00	
LAYOUT, SAFETY AND UPRR COSTS	QTY	UNITS	UNIT PRICE	TOTAL COST	COMMENTS
TRAFFIC CONTROL	1	LS	\$ 100,000.00	\$ 100,000.00	
SURVEY AND CONSTRUCTION STAKING	1	LS	\$ 65,000.00	\$ 65,000.00	
UPRR CROSSING	1	LS	\$ 51,000.00	\$ 51,000.00	Included permit cost already paid and installation of two railroad panels plus crossing agreement.
SUBTOTAL - LAYOUT, SAFETY AND UPRR COSTS				\$ 216,000.00	
TRAIL IMPROVEMENTS	QTY	UNITS	UNIT PRICE	TOTAL COST	COMMENTS
8' WIDE CONCRETE TRAIL	9200	LF	\$ 64.00	\$ 588,800.00	\$8/SF for Pavement
GRADED SHOULDER	18400	LF	\$ 1.25	\$ 23,000.00	
STRUCTURAL FILL	1750	CY	\$ 12.00	\$ 21,000.00	
AGGREGATE BASE COURSE	1750	CY	\$ 8.00	\$ 14,000.00	
CURB RAMPS	442	SY	\$ 145.00	\$ 64,090.00	
CONCRETE CURB AND GUTTER	388	LF	\$ 36.00	\$ 13,968.00	
ENHANCED CROSSWALK STRIPING (THERMOPLASTIC)	4300	SF	\$ 10.95	\$ 47,085.00	
4" WHITE STRIPE	280	LF	\$ 2.00	\$ 560.00	
12" STOP BAR	50	LF	\$ 36.00	\$ 1,800.00	
EARTHWORK COMPLETE IN PLACE	3805	CY	\$ 18.00	\$ 68,490.00	
SUBTOTAL - TRAIL IMPROVEMENTS				\$ 842,793.00	
LANDSCAPE & SIGNAGE IMPROVEMENTS	QTY	UNITS	UNIT PRICE	TOTAL COST	COMMENTS
PED CROSSING SIGNAGE	23	EA	\$ 750.00	\$ 17,250.00	2 SIGNS AT EVERY NON-SIGNALIZED TRAIL CROSSING AND 2 WARNING SIGNS FOR RAILROAD CROSSING
RAILROAD CROSSING PEDESTRIAN GATES	2	EA	\$ 2,200.00	\$ 4,400.00	
REST AREAS	2	EA	\$ 3,500.00	\$ 7,000.00	1 EVERY 1 MILE (INCLUDES BENCH, SHADE TREE TRASH RECEPTACLE)
SEEDING	8800	SY	\$ 0.60	\$ 5,280.00	SEEDING 4' ON EITHER SIDE OF TRAIL
LANDSCAPE RESTORATION (SOD)	2700	SF	\$ 1.35	\$ 3,645.00	
IRRIGATION REPAIR	2700	SF	\$ 1.55	\$ 4,185.00	
LANDSCAPE WALL (MAX 18")	180	LF	\$ 110.00	\$ 19,800.00	CONCRETE RETAINING WALL BLOCK
SUBTOTAL - LANDSCAPE & SIGNAGE IMPROVEMENTS				\$ 61,560.00	
SUBTOTAL - CONSTRUCTION COSTS				\$ 2,761,741.20	
PERMITTING	1	LS	\$ 138,087.06	\$ 138,087.06	5% OF SUBTOTAL
CONSTRUCTION MANAGEMENT/INSPECTION	1	LS	\$ 303,791.53	\$ 303,791.53	11% OF SUBTOTAL (INCLUDES 1% OF SUBTOTAL FOR MATERIALS TESTING)
MOBILIZATION	1	LS	\$ 138,087.06	\$ 138,087.06	5% OF SUBTOTAL
MINOR CONTRACT REVISIONS	1	LS	\$ 828,522.36	\$ 829,000.00	30% OF SUBTOTAL ROUNDED UP
AURORA AMANDA REVIEW	32	EA	\$ 549.00	\$ 18,000.00	
CIVIL ENGINEERING FEES	1	LS	\$ 89,756.59	\$ 89,756.59	3.25% OF SUBTOTAL
ENVIRONMENTAL ENGINEERING FEES	1	LS	\$ 55,234.82	\$ 55,234.82	2.0% OF SUBTOTAL
STRUCTURAL ENGINEERING FEES	1	LS	\$ 55,234.82	\$ 55,234.82	2.0% OF SUBTOTAL
ROW ACQUISITIONS (PRIVATE)	4262	SF	\$ 5.00	\$ 21,310.00	SIDEWALK/TRAIL EASEMENT
SUBTOTAL - ADDITIONAL COSTS				\$ 1,648,501.89	
PROJECT TOTAL				\$ 4,410,243.09	
PROJECT TOTAL W/ 10% CONTINGENCY				\$ 4,851,267.40	